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Original Communications.

*SOME IMPORTANT FACTS ABOUT CHLOROFORM.**

BY H. A. HARE, M.D.,

Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia.

The effects of chloroform upon the vital functions has been for many years a subject of hot dispute between various surgeons and pharmacologists. On the one hand has been the school originally led by Syme of Edinburgh, which has asserted that death or danger from chloroform lay in failure of the respiration and that this was the function to be watched while chloroform was being used; on the other hand the so-called London school has asserted that death arose from cardiac failure and that the pulse was the thing to be watched during the use of chloroform. The number of clinical and laboratory researches which have been carried out to determine which of these opinions was correct has been very great, both in England and in America, but it has only been within the last ten years that the greatest and most competent studies have been undertaken, of which the best known is the series made through the munificence of His Highness,

*A paper read before the College of Physicians of Philadelphia, Jan. 6th, 1897.

the Nizam of Hyderabad, in India, and known as the "Reports of the Hyderabad Chloroform Commissions Nos. 1 and 2." The conclusions of the first commission having been criticized adversely because it asserted that the cause of death was respiratory failure, a second commission was formed, and under a grant of $5000 from the Nizam, Dr. T. Lauder Brunton of London was sent out to direct the second investigation. Although a teacher of the theory that death from chloroform is due to cardiac failure, this gentleman returned to England converted to the idea that the cause of most of the fatal accidents under this drug is respiratory failure, and the conclusions of Commission No. 2 were once more criticized by numerous clinicians and pharmacologists in England and America. About this time the author and H. C. Wood published a paper in which they expressed their belief in the powerful depressing effects produced by chloroform upon the heart; and MacWilliams of Glasgow proved by experiment that chloroform without doubt causes cardiac dilatation and enfeeblement. Shortly after this the author of this article was asked by the Government of His Highness the Nizam, through Colonel Edward Lawrie, the Residency Surgeon, to carry out a series of studies designed if possible to reconcile the contradictory results reached by the Hyderabad Commissions and other investigators, and simultaneously Gaskell and Shore in Cambridge University, England, were asked to do likewise. The result has been to confirm in every way the results of all previous studies in one respect, namely, that the primary action of chloroform, on the vital functions of circulation and respiration, is greatly to depress the vaso-motor system, thereby causing an extraordinary fall of blood-pressure. Gaskell and Shore, to be sure, assert that anesthesia can be produced by chloroform without causing this fall, but the author has never been able to do so. They also believe that the fall is chiefly a result of cardiac failure. With this view the author dissents, because their experiments upon which these assertions are based were too complex to give positive results; and second, because his own studies and those of others show the vaso-motor system to be depressed. There is of course some cardiac enfeeblement and dilatation, which adds to the fall of pressure.

As with other discussions in medicine, the truth of the question as to whether chloroform causes death by respiratory failure or cardiac failure lies as it were half-way between the two antagonistic forces; and, further than this, the somewhat startling statement may be made that it is not directly due, in the majority of cases, to either of these causes. On the contrary, *the cause of death from chloroform is usually vaso-motor depression*, whereby the arterioles allow the blood to pass too freely into the great blood-vessel areas which are found in the capillaries and veins, and as a result the man is suddenly bled into his own vessels as effectually as if into a bowl. When it is remembered that the capillary network of the body will, with the relaxed veins, hold many times the normal quantity of blood, and when it is remembered that we can inject salt solutions into the vessels to the extent of several times the normal quantity of blood without raising the blood-pressure, it at once becomes evident that the complete vascular relaxation caused by chloroform results in failure of all the vital functions, not because the drug has paralyzed the heart or respiratory centre, but because these parts are deprived of blood by its stagnation in the widely dilated capillaries and abdominal veins. Recent studies by Leonard Hill on "The Physiology and Pathology of the Cerebral Circulation" showed that this was the case, for he asserts that when the blood was no longer flowing to the respiratory centres the heart was still beating, because its coronary arteries, being lower down, were more easily supplied by the small blood-stream received by the heart from the veins. These studies are proved by the experiments of myself and my assistant, Dr. Thornton (THERAPEUTIC GAZETTE, October, 1893), by every tracing of the Hyderabad Commissions, and all other tracings we have ever seen. We may conclude, therefore, that while chloroform without doubt acts as a powerful depressant poison to the respiratory centre and the heart, in the same manner as it paralyzes all living protoplasm when applied in excess, that when properly given by inhalation it produces a death equivalent to that resulting from hemorrhage, which is a failure of the respiration not so much from a direct depression of the respiratory centre as from its starvation of blood; and while the tendency of the drug is to depress and dilate the heart, just as it dilates the vessels of which the heart is merely a highly specialized part, the failure in the pulse rests upon vaso-motor palsy, the patient becoming pulseless because the heart has not any blood to pump.

Let us see what evidence supports this

view: First, we have the laboratory tracings of many independent investigators extending over many years and made in all parts of the world, all of which show a fall of blood-pressure. Among these may be named Bowditch and Minot of Boston, Coats, H. C. Wood, Gaskell and Shore, the Hyderabad Chloroform Commissions, the studies of Wood and myself in 1889 and 1890, and of myself and Thornton in 1892 and 1893. They are confirmed by Hill, who has seen the abdominal vessels engorged with blood under chloroform, the medulla almost bloodless and the heart still pumping though respiration had ceased. They are confirmed by my own experiments, in which I proved that even after the respiration had stopped and the carotid was empty, and the dog apparently dead, he could be resuscitated by visceral compression and artificial respiration, and by inversion whereby the blood left the dilated abdominal veins for the heart and brain. Again, if a needle was inserted through the chest-wall the heart was found to be beating, for the needle moved to and fro; and finally if the chest was opened the heart could still be found beating feebly — dilated, it is true, but beating.

So much for the laboratory evidence. What have we in clinical evidence? Equally positive proofs of vaso-motor palsy, and none of death being purely cardiac or respiratory. For years Chisholm of Baltimore and later Howard Kelly and a large number of others have used inversion with compression of the floating ribs in artificial respiration, which has forced the blood into the chest and saved life again and again. For years the literature of medicine has teemed with reports of death from chloroform while the patient was sitting up or half recumbent, because the blood-paths being dilated this posture favored anemia of the vital centres. Again, it has been proved both experimentally and clinically that the best vaso-motor stimulant — belladonna or atropine—given before the chloroform, increases its safety, and that compression of the limbs by bandages does likewise. Finally, Hill has shown that abdominal compression also produces resuscitation by sending the blood to the heart. On the contrary, saline transfusion, which at first glance would seem to be indicated, is useless, because the dilated blood-paths will receive all the saline for a long time before they will overflow towards the heart, for as fast as the fluid flows in they dilate.

My conclusions therefore are, that while chloroform in its general depressing power depresses all vital functions, it is the question of blood-pressure which is most important, and therefore in the use of chloroform we should always keep the head low, precede the use of chloroform by atropine hypodermically, bandage the limbs if the case is feeble or already bloodless, and if necessary place compresses on the belly and apply them deeply by pressure if a failing circulation is developed.

The primary action of the chloroform is to depress the blood-pressure chiefly by its vaso-motor effect, secondly by its cardiac effect, and finally that while the drug does exercise a depressant effect on the respiratory centre, the failure of this centre is chiefly due to anemia. As, however, an intact respiratory centre means regular breathing, we watch this function to determine the dose of chloroform actually inhaled, and because any variation in this function, as shown in irregular breathing, means that the chloroform is disordering arterial tension. Death from chloroform, then, is usually a vaso-motor death, for an intact arterial system is as important to vital function as an intact cardiac apparatus.

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*THE SUTURE-CLAMP OPERATION FOR HEMORRHOIDS.**

By Llewellyn Eliot, M.D.,
Washington, D. C.

It is not my intention, at this time, to discuss the various operations for the cure of hemorrhoids, but simply to call attention to an operation which I have successfully performed several times during the past year. The operation and suture clamp, so far as I am aware, originated with Dr. William Erwin, of Walter's Park, Pa., and should receive more extended recognition, as an examination of the instrument will illustrate the simplicity of the procedure.

The clamp consists of two arms bent at a right-angle at the lower end; this bent portion, which is about one and a half inches long, is provided with a shoulder one fourth of an inch high and perforated by five small openings; the shafts above the angle are pivoted and serrated to receive a ring which regulates compression and bleeding.

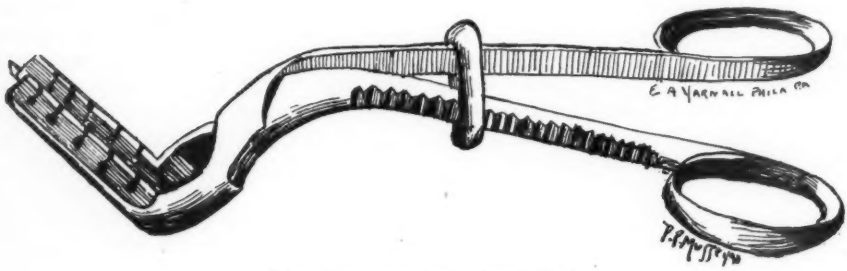
To do this operation the patient is prepared by having the bowel well flushed; the legs are held with a leg-holder; the sphincter is well dilated; the hemorrhoid seized with a

* Read before the Medical Society of the District of Columbia, Oct. 14, 1896.

forceps and well drawn down; the clamp is then applied as near the base of the hemorrhoid as possible, and the ring slipped along the serrations until we have a sufficient amount of compression to control hemorrhage. With a needle threaded with silk or catgut the hemorrhoid is pierced through the needle holes of the clamp. When the sutures are placed, the hemorrhoid is cut off with either knife or scissors, the sutures tied and the clamp removed; the stump is dressed with either aristol, acetanilid, iodoform, or other antiseptic material, and returned to the bowel should it not return of itself; gauze, absorbent cotton, and a T bandage complete the operation. When the hemorrhoid is longer—that is to say, has a base broader than the blade of the clamp is long—the hemorrhoid must be removed in sections, one section being completed to the tying of the last stitch, before the second section is attacked. The reason for leaving the last stitch incomplete is, that one may have a certain amount of control of the remaining part, and then again the clamp can be placed more satisfactorily. It is surprising to see what a small amount of blood is lost in this procedure; and if the sphincter has been well dilated there is a comparative absence of pain following the operation. Convalescence is usually very rapid; there is but a short detention from business, the sutures being removed on the fifth or sixth day, when the wound is nearly healed. Should the stumps remain large, a few applications of a mildly astringent solution of alum or tannic acid will contract them and cause them to disappear.

Chloroform must be administered to perform this properly, as well as any other operation about the rectum.

No case histories are cited here, but I have removed by this operation seven hemorrhoids at a sitting, when the anus resembled a link of sausage, flanked with grapes and cherries. This was more than I would have dared to do under any other operation, on account of the troublesome hemorrhage attending the use of the clamp and cautery, the incision, or the Whitehead, or the excessive sloughing which would have attended the injection method. In every case the patient has been discharged before the end of the second week, and has remained cured, if the expiration of a year without return may be regarded as a cure. There is no effort made to control the action of the bowels after the third day, when they may be allowed to move. The diet is restricted for the first few days to liquids or semi-fluids; then all restriction is removed.



Suture-clamp operation for hemorrhoids.

The advantages of this operation are: it is almost bloodless; it does not present a sloughing surface; it heals rapidly; it removes the entire hemorrhoid; and it does not affect the tonicity or the calibre of the bowel.

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*CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF ADHERENT PLACENTA.**

By Bedford Brown, M.D.,
Alexandria, Va.

Firm adhesions of the placenta to the walls of the uterus may occur at any stage of gestation. I have not infrequently seen cases in the early stages, at the third and fourth months of pregnancy; then again at the fifth and sixth months, and at full term.

Etiology of Adherent Placenta.—Unnatural adhesion of the placenta to the walls of the uterus must be regarded in the light of a true pathological process: this is eminently true of the condition when found in the last stage of pregnancy. In all the cases occurring in my practice at term or after the fourth month there were morbid conditions of the

* Read before the Southern Surgical and Gynecological Association, November, 1896.

system or traumatic causes existing to account for the presence of the complication. In three cases there was present positive rheumatic diathesis; in one there was present a decided gouty diathesis; in two the subjects had constitutional syphilis; three of the cases could be accounted for by traumatism, and in only two were there unknown causes.

Out of some two hundred cases of abortion in the early months of pregnancy seen in my professional practice, some thirty were complicated with adherent placenta. In my own experience in a very considerable portion of the cases of abortion the placenta has been adherent. I could not be mistaken in this condition, as the os uteri was amply dilated and the placenta remained strongly attached, and had to be scraped away in detached portions from the seat of attachment with the inserted finger. Then again, after abortion, I found in certain cases, weeks after the expulsion of the fetus, the placenta firmly attached, well preserved, with a communicating circulation with the uterus. Cases of abortion sometimes occur in which the placenta is adherent but dies from want of circulation, and remains in its attached state. After abortion, in cases of adherent placenta, if the organ is permitted to remain, and if the placenta is connected with the uterus by a continuous circulation, it continues to live and may give rise to occasional hemorrhage, but never to sepsis. On the contrary, when the adherent placenta dies and remains in utero a long train of evil consequences arise —repeated hemorrhage, sepsis, septicemia, fever, and local septic inflammation in the pelvis, as endometritis or pelvic peritonitis.

I am convinced that adherent placenta will be found in a considerable portion of the cases of abortion—many more than is generally thought.

In the cases of adherent placenta of syphilitic origin coming under my care, the abortion has taken place about the fifth month of gestation. In these cases the fetus was dead. In the cases of adherent placenta arising from the rheumatic and gouty diathesis, gestation went on to full term; in those arising from traumatism, the miscarriage occurred some two or three weeks after the injury. In two of these cases the injury was caused by blows on the abdomen; in another, by a fall on the abdomen; in all, there was pain and soreness over the location of the injury sufficient to excite suspicion of local peritonitis, and lasting for some days. The supposition was that inflammatory action was set up by the injury in the uterine tissue at the seat of the placental attachment. One of these females had complete adherent placenta in three consecutive labors, at intervals of about two years. This patient had a remarkable tendency to acute inflammatory rheumatism. During her pregnancies she invariably had two or more attacks of acute articular rheumatism, but during the period of lactation was free from rheumatic attacks.

In these cases, whatever the primary or remote cause may be, the immediate cause of adhesion is probably inflammatory action resulting in fibrinous exudation and adhesion of the placenta to the walls of the uterus.

The character of the adhesion differs materially in the different cases: in some it is exceedingly strong and firm; in others the medium of adhesion is not difficult to overcome. I have found the firmest adhesions in the rheumatic cases: in all three of these cases the adhesion was so strong and firm that the placental tissue seemed to be a part of the uterine walls, and it was with the greatest difficulty that it could be removed and then only by scraping with the finger-nail, disintegrating the placenta in detached pieces and then scraping the uterine walls thoroughly. In some the placenta could be pulled off with the finger *en masse;* this was particularly the case with the gouty and syphilitic. In the first rheumatic case terrible sepsis, septic inflammation and septic fever followed, caused by a very small portion of dead placenta left in attachment: in the two other cases of rheumatic adhesion there were septic fevers, but of a modified type, and in the last one it only continued for a few days.

In all the cases there were slight septic manifestations, but they were easily controlled. It is very remarkable what a small portion of dead animal tissue undergoing the process of putrefaction will produce septic poisoning if left in the uterus. I have seen a portion of putrid, fetid placenta not larger than the end of the finger cause alarming sepsis, and have seen a portion of putrid membrane not larger than a silver dollar cause severe chill and a high grade of septic fever. I have again seen a decomposing clot retained in the uterus give rise to decided symptoms of sepsis. This teaches us the important lesson that we cannot be too careful in clearing the uterus of every particle of dead animal matter.

In my experience the question of sepsis in cases of adherent placenta depends almost entirely on whether a portion is left adherent

to the walls of the uterus. If even a small particle of placenta is left adherent and undergoes putrefaction, sepsis will surely follow: if the particle is very small the septic fever may not be of a violent character, but there will be more or less septic fever. But even in the case of a fetid portion remaining in utero and producing sepsis, this septicemia may be greatly modified by the action of antiseptic intra-vaginal douches. A dead piece of placenta in utero subjected to a temperature of 100° is one of the most offensive, stinking, infectious portions of animal matter I know of. I have known a portion of putrid placenta not larger than a marble when expelled from the uterus render a room horribly offensive. These small particles, often left after the removal of the mass, which are sure to become a source of trouble, can be disinfected, deodorized and embalmed so as to render them innocuous.

In all the cases followed by sepsis in my practice the attachment of the placenta was very firm and close, necessitating the removal of the placenta in detached portions after being broken up, when doubtless small portions were inadvertently left, though the walls of the uterus were carefully scraped with the finger-nails. In those cases where the attachment was such that the entire organ in mass could be pulled off there was no sepsis.

Method of Removing the Placenta.—As a preliminary measure to the operation of removing an adherent placenta the hands and arms of the accoucheur should be thoroughly scrubbed with carbolic soap and then bathed in a strong solution of sublimate. The vagina should be well douched with sterilized water containing bichloride in solution. The patient is now laid across the bed in the lithotomy position and placed fully under the influence of chloroform. The globe of the uterus is held down firmly by the hand of an assistant, while the operator inserts his hand up to the fundus of the uterus and gradually but cautiously pulls or scrapes off every particle of adherent placenta. This operation is really a very important one, and its success depends on its being carried out in all its details.

I performed this operation once without the aid of an anesthetic, but will never attempt it again. It is far safer for the patient and far easier for the operator, and can be completed much quicker and more thoroughly, as we have complete control of the situation. I prefer in these cases the natural curette—the finger—to any other instrument, as the sense of touch is the very best guide and tells us what we are doing and what we should do in a manner that no metallic instrument can. If a chill and fever should occur within two or three days after the operation, we may know that we have left a small particle of dead placenta that has undergone putrefaction in the uterus and is proving a source of septic poisoning to the general system; we must be prepared to disinfect promptly this poisonous mass, no matter how small it may be, for a small portion of putrid placenta will infect a strong, healthy, robust woman and cause her death. I am so much impressed with the importance of the operation of removing an adherent placenta, and its consequences to the life of a mother, that I consider it a more momentous matter than the amputation of a limb.

Case I.—Mrs. R., aged thirty-two; third child; had an attack of inflammatory rheumatism in the early months of her pregnancy, which continued until very near her confinement, resulting in anchylosis of the knee joint. The labor was natural. The placenta was found closely adherent to the uterus. The operation for removing the placenta was performed without the aid of an anesthetic as the patient refused to take it, and the removal was accomplished with great difficulty. It was necessary to remove the placenta in detached portions, and finally, after all was supposed to be removed, the uterine wall was scraped with the finger-nail. This case occurred twenty-seven years ago, long before the modern treatment of these cases was thought of. At that time such a thing as an intra-uterine douche was unheard of. This was the first case in which I had personal experience with a vaginal disinfectant douche in puerperal cases.

The hemorrhage during the operation was not alarming. The patient did very well until the third day, when a prolonged chill ushered in a violent fever: the pulse very soon reached 125, the temperature 105°, and the abdomen became tense and painful—indeed, all the indications of general peritonitis set in. For twelve or fifteen days the life of the patient was despaired of. During this time the pulse ranged from 130 to 135; the temperature was 105° to 106°. The tympanitis was very great.

The treatment consisted in the use of quinine in large doses; calomel and opium; turpentine stupes; a saline laxative; and vaginal douches of hot water and carbolic acid.

About the fifteenth day a small portion of intensely offensive, putrid placenta was discharged; its odor was perfectly nauseating. This particle of placenta did not exceed in size the end of the finger. From that time the pulse and temperature began to be lowered, the tympanites and abdominal pain to subside, and in four or five days my patient had passed the crisis and was beyond the danger line. Immediately after the attack of peritonitis developed the symptoms of rheumatism promptly subsided.

CASE II.—Mrs. R. This was the same woman whose history was related in Case I. Two years after the last labor she became pregnant again and in due time gave birth to another child. During this pregnancy she had two severe attacks of inflammatory rheumatism, the last continuing up to the period of labor. She again had an adherent placenta, but not so firm as before. Under the influence of an anesthetic I very carefully removed every particle of placenta and scraped the seat of its attachment. The patient had but slight fever and recovered without difficulty.

CASE III.—In her next pregnancy Mrs. R. was much afflicted with articular rheumatism and confidently predicted another case of adherent placenta, which prediction was fully realized. After her labor, which was natural, the placenta was found adherent and very carefully removed under anesthetics. No fever followed in this case, and the patient did well.

One of the most remarkable features of this phenomenal case was that every child born with an adherent placenta was profoundly idiotic and died before reaching the sixth year. This woman gave birth to three children subsequent to this without the rheumatic features and without the adherent placenta, and all of these children are well developed and fairly intelligent.

CASE IV.—Mrs. B., young woman; second child; labor natural. The placenta was found attached rather firmly, but was pulled off and removed *en masse:* it was studded with numerous deposits as large as peas throughout its tissues. This patient had suffered several attacks of gout of the toes and fingers; in the joints of the latter there were considerable deposits of urate of soda. She had quite a sharp attack of gout during her pregnancy. This case did well and was not followed by any septic symptoms.

I cannot for a moment doubt that this was a case of gouty placenta.

CASE V.—Mrs. F., aged twenty; soon after marriage contracted syphilis from her husband. When I first examined her I found a fully developed chancre on each labia, which had appeared about five weeks previous. Under treatment these chancres healed in two or three weeks. Some two or three months subsequent to this she became pregnant with her first child. At the fifth month of gestation I was called to see her. She was thin, and threatened with abortion. In due time the abortion took place without the slightest discharge of blood. This is a common feature of labors wherein the placenta is completely adherent. In this case the umbilical cord was perfectly atrophied. It was exceedingly attenuated, soft, and easily torn. The fetus was emaciated and of a pale sallow color. The placenta was found perfectly adherent in its entire circumference, and was in a diseased condition. The vagina was washed out with warm sublimate solution, and the patient placed across the bed in the lithotomy position and given an anesthetic; the hand—disinfected—was inserted into the vagina and uterus without difficulty and the diseased mass pulled off, leaving the walls of the uterus perfectly clean. I will state here that when necessary the entire hand can be inserted into the uterus at fifth month of pregnancy without the least difficulty when the patient is fully under the influence of chloroform. She recovered without an untoward symptom. During her pregnancy she had well-marked symptoms of secondary syphilis in the form of ulcerative throat and syphilitic eruption, and was treated for these symptoms. After confinement the patient was subjected to a rigid system of treatment for syphilis, with entire recovery. She subsequently gave birth to a healthy child.

CASE VI.—Mrs. K., young woman with first child; labor natural. On examination of placenta attached to one edge of the organ there was found a distinct pedicle about one inch and a quarter in length which had a torn end and evidently had been separated from an attachment to some point beyond the placenta. I thought it best to explore the uterine cavity to ascertain whether anything remained. The patient was chloroformed and a careful exploration made, with the result that a perfect cotyledon of the placenta measuring one and a half inches in diameter was found completely adherent to the uterus, but was pulled off and removed intact. The corresponding end of the pedicle

was found attached to the cotyledon. Slight hemorrhage followed the removal but no other trouble.

I have reason to believe that while these cotyledons are not frequent complications they are more frequent than is usually supposed, and that when left in the uterus they will give rise to most serious consequences in the form of puerperal sepsis.

CASE VII.—Mrs. B. during pregnancy with her third child sustained a severe fall from a considerable height, striking the abdomen about midway on the back of a heavy chair, with great force. She suffered intense pain in the region of the injury. For many days she was confined to her bed with pain and extreme tenderness over this region, accompanied by fever. At this time I apprehended general peritonitis, but the symptoms ultimately subsided without serious consequences. This accident occurred at the sixth month of pregnancy. In due time she was delivered, after a natural labor, of an ill-developed, small and delicate child. The placenta was found perfectly adherent to the walls of the uterus precisely corresponding to the seat of the injury. The adherent organ was removed in the usual way under chloroform, and subsequently the patient did well. All the indications in this case point to it as a very good example of adherent placenta from traumatic causes.

Treatment of Adherent Placenta after Abortion during the Early Months of Pregnancy.—After a large experience in the management of accidental abortion—amounting to some two hundred cases—in a considerable proportion of which the placenta was adherent, I have come to the conclusion that the best and safest method of removing it is to place the patient across the bed in the lithotomy position, disinfect the vagina and the physician's hand, put her under chloroform, insert the entire hand in the vagina, then the first and second fingers of the left hand in the uterus and, using the finger as a curette, remove every particle of the placenta. Then wash the uterus out with a solution containing permanganate of potash, two grammes to the ounce.

I believe this to be a better, safer and easier method than that by the steel curette, and one by which no damage can be done to the walls of the uterus.

I desire in conclusion to say a word relating to the use of ergot in cases of adherent placenta, whether after abortion in the early months of pregnancy, or at term. It can accomplish no good whatever, and is capable of doing much harm by producing a rigid contraction of the uterus, and particularly the os uteri; in this way delaying expulsion and preventing the introduction of the fingers or hand.

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*SO-CALLED SPIDER-BITES AND THEIR TREATMENT.**

BY DR. A. DAVIDSON,
Los Angeles, California.

It has not infrequently happened that people have presented themselves at my office showing a small wound (usually on the hand or arm) with an inflamed areola of skin around the puncture, and complained of more or less pain at the seat of injury. To the inquiry, "What injured you?" the reply is almost invariably, "Something bit me last night—I think it was a spider;" and if by any chance they saw somewhat darkly the object causing the injury, the probabilities are they would qualify the remark by the addition of "black spider."

Of the smaller spiders popularly supposed to be poisonous we have two—*Phiddipus Johnsoni*, Peck., and *Lathrodectus mactans*, Fabr.—both quite common in Southern California. Of the larger spiders, such as the Lycosa and Tarantula, the majority are probably poisonous enough, but of these I will not speak.

Direct and conclusive proof of the poisonous nature of our smaller species is still wanting, though the fragmentary evidence available is in some particulars probably conclusive enough. The two spiders *L. mactans* and *P. Johnsoni*, in common with other members of the Aranead family, possess a poison-gland and a hollow tooth or fang through which the poison is distilled into the wound produced. The poison-gland in relation to the fang is situated somewhat as it is in the rattlesnake, the poison-sac being attached to the root of the fang by a small tube that conducts the poison down the hollow shaft. The fangs of the smaller spiders act laterally; in the tarantula and kindred species they act vertically as in the snake. When the spider strikes, the fang, which in rest is folded back, is straightened and as it strikes, the poison, if the spider so wills it, is ejected. From the nature and disposition of the muscular fibres around the poison-sac, as well as from the fact that the spiders do not always use the

* Read before the Southern California Medical Society, Dec. 18, 1896.

poison when striking insects, the ejection of the poison is believed to be under the control of the animal, thus differing materially from the rattlesnake, where the mere closure of the jaws compresses the sac and expels the poison. A small channel penetrates the tooth, opening on the side a little way from the apex; this opening is admirably placed for the purpose of ensuring its freedom from clogging when penetrating; and the double beveling of the opening still further assists in securing its patency.

Dr. Brown of Pomona, in a paper read before the Pomona Medical Society, detailed the history of a number of cases of individuals believed to have been bitten by *L. mactans*, in all of which the history and symptoms were very much alike. The individuals were in almost every instance bitten while on the seat of the water-closet, and all cases were characterized by sudden illness following the receipt of the injury—severe pains at the seat of injury radiating to the trunk and limbs, with precordial oppression and general symptoms of collapse, nausea, perspiration, cyanosis, but no local signs. Pains lasted for weeks and recovery was slow. Dr. Brown concludes his paper by saying there seems no doubt that this animal is provided with a venom "which for its size and the quantity of its poison exceeds that of any other living thing."

All this is in marked contrast to the symptoms presented by the two cases that have come under my observation. No. 1 saw the spider as it bit his leg, and killed it; and from the account of its appearance I think it was undoubtedly a *L. mactans*. The symptoms that followed may be classed as a simple painful cellulitis such as follows poisonous bites of other animals, but which in this instance incommoded the individual for nearly three weeks. No. 2 lay down on the ground at midday to sleep, disposing his hands across his chest. Shortly after he felt something prick him at the base of the thumb; he struck at and killed it and found it was a specimen of *L. mactans*, with which he is quite familiar. The subsequent pain was similar to that following a bee-sting, and the part rapidly swelled to above the wrist. Next day the swelling was quite as marked and the pain was still present, though slight. On the third day it began to improve, and in a week all traces of injury had disappeared.

It is possible that different results from the same animal may be explained by individual peculiarity or the rapidity of the absorption of the poison. In the event of a wound being directly inflicted on a vein it is quite conceivable that general prostration with cardiac distress and respiratory difficulty might supervene. This may in a measure explain the peculiar symptoms complained of in Dr. Brown's cases, where the injuries were inflicted on the genital regions, the vascularity and extreme sensibility of which parts may have favored the absorption of the poison and increased the nervous symptoms.

The doubt naturally arises whether the injuries in Dr. Brown's cases were inflicted by the *L. mactans* or even by a spider at all, as he gives no record of the animal having been caught. There is no doubt that if a Lathrodectus spider beneath the seat of a water-closet is disturbed while nesting it will attack the disturbing object nine times out of ten. During the autumn season, after spinning the cocoon that holds its eggs and protects its young, it keeps closely around or broods over it like a bird over its eggs, and is very fierce in the defense of its nest, which may in part account for the frequency of its bites and the wholesome respect the laity show towards it. The species most common in water-closets are the common *Pholcus phalangioides*, Fuesl., and if over water *Tetragnatha elongata*, Walck., both of which are supposed to be quite harmless. *Phiddipus Johnsoni*, our other reputedly poisonous species, may be found anywhere, as it is of a nomadic family, and hunts its prey after the manner of the feline race. I never saw a case of injury supposed to have been caused by this spider.

The Mexicans have a wholesome dread of "the black spider," and many say they would rather be bitten by a rattlesnake than by such an animal. Their fears, while they ought not to be wholly ignored, should not bias us against all black spiders, for some of that color are admittedly harmless enough.

It is somewhat interesting and throws a rather conflicting light on the general nature of spider-bites to review the experience of naturalists of other countries. Walckenaer (His. Nat. de Insects) says: "However violent may be the effect of the venom which a spider injects into the puncture, this venom in the largest species in France produces no effect on man." Blackwall (Linnean Society Transactions) considers all British species non-poisonous. *L. malmigniatus*, Walck., of Southern Europe, according to reports published in 1843, produced painful cellulitis lymphangitis with nervous symptoms, sometimes ending in convulsions; yet Lucas has exposed himself frequently to the bite of this same

spider and felt it no more than he would the prick of a needle. The bite of the *Katipo* of New Zealand, a species of the same family, is reputed to be quite poisonous, and cases are detailed in which symptoms of depression, prostration and pain were severe, but in few if any of them was the spider seen. In this country in 1886 a case was reported from North Carolina, by an intelligent farmer, where a negro was bitten by a spider believed to have been *L. mactans*, and died fourteen hours after in convulsions.

Against the popular prejudice here and elsewhere concerning spider-bites we have arrayed the experience of almost all naturalists in favor of their harmlessness — Waldenaer, McCook, Blackwall, and others have been repeatedly bitten by supposedly injurious species without any untoward result. A dispassionate survey of the whole subject would seem to suggest that spider-bites, like bee-stings, are more or less injurious according to the individual susceptibility, but are on the whole less troublesome and serious than a bee-sting. Some people have died of collapse within half an hour after the receipt of a bee-sting, and in almost every individual they are associated with more or less local inflammation. Inflammation has been seen to pass to local gangrene in strangers in India when first exposed to mosquito bites.

This *résumé* of my knowledge of spider-bites I have thought necessary to give, though I believe it may be accepted as a fact that almost all the so-called spider-bites met with in this section are produced by no spider at all, but by an insect called the pirate bug (*Rhasahus biguttatus*, Say.). This insect is common at some periods in orchards around the city, and may be found in our streets and dwellings, being attracted along with other insects by the lights. Now and then we meet with individuals who present themselves for examination, and give a history of being bitten in the house by some animal, which they brush off and think it is a spider. Next day the injured part shows a local cellulitis with a central dark spot; around this spot there frequently appears a bullous vesicle about the size of a ten-cent piece and filled with a dark grumous fluid; a small ulcer forms underneath the vesicle, the necrotic area being generally limited to the central part, while the surrounding tissues are more or less swollen and somewhat painful. In a few days with rest and proper care the swelling subsides, and in a week all traces of the cellulitis are usually gone. In some of the cases no vesicle forms at the point of injury, the formation probably depending on the constitutional vitality of the individual or the amount of poison introduced. An entomological friend of mine has been punctured frequently by this insect, and in a few of the instances where patients have been "stung" the insect has been captured and brought to me, so that there can be no doubt as to the animal causing the injury. Probably all so-called spider-bites inflicted on individuals in the house are caused by this pirate bug, as *L. mactans* is never found in the house, and though Phiddipus, being of a wandering disposition, may stray into the house, yet it is rarely found there. This solution of the "spider-bite" problem explains why the animal that inflicts the bite is rarely found. If an individual is bitten by a genuine spider the animal, even if brushed off, would readily be found, but the pirate bug if so treated would escape by flying, while the individual is guessing he must have been bitten by a spider.

This pirate bug inflicts the wound by its proboscis, and so far as I am aware does not introduce any specific poison of its own secretion into the wound. The poison introduced is probably accidental and contains the ordinary putrefactive germs that may adhere to its proboscis. The insect normally preys on aphis, flies, and black scale, and, being carnivorous in its tastes, probably also feeds on the juices of putrid animals, thus acquiring the poison with which it infects the wound.

The *treatment* of such wounds has been in accordance with this theory and I have therefore applied corrosive sublimate 1:500 or 1:1000 locally to the wound, keeping the necrotic part bathed in the solution. The results have been in all cases favorable; the improvement after the application of the bichloride is usually so definite as to leave no doubt in my mind of its direct beneficial influence.

ECZEMA UMBILICI AND ITS TREATMENT.

By J. Abbott Cantrell, M.D.,

Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine; Dermatologist to the Philadelphia and Frederick Douglass Memorial Hospitals, Philadelphia.

Eczema of special regions demands distinct inquiry more often than does the disease when witnessed in usual or more exposed parts, and as this is especially true of eczema affecting the umbilicus or its contiguity my

remarks will be apropos at this time. Whether the part recedes or protrudes the same inquiry will be demanded on account of the numerous folds into which the disease may locate itself. When depressed beneath the general surface the condition is more likely to be unattended to until such time as the affection spreads upon the surrounding parts, because the afflicted person believes that in a short time the disease will heal of itself, but if the patient was aware what he was allowing to proceed he would immediately seek medical advice. Those persons in whom the part protrudes to some distance beyond the surrounding areas usually notice the uncomfortable symptoms long before the contiguous portions are involved and consequently seek proper intervention before the disease is allowed to progress to any alarming proportions.

Looking at the part in its natural and undiseased condition we discern a peculiar formation in its eagerness to adapt itself to circumstances. In the depressed variety usually found in those of large structure we notice a well formed concavity in which one can easily place the tip of the finger to a depth of from one quarter to one inch according to the size of the individual. The rugous elements are so arranged that one fold overlaps another in such manner as to be better able to resist contusion from without, but at the same time producing numerous sulci into which disease may creep unnoticed, and lurk until the proper time arrives for its extension. As the surrounding parts contain large collections of fatty substance the receded umbilicus is likely to be covered entirely at times during the movements of the individual, thus preventing proper access of air to the unnaturally made cavity and in a like degree retaining whatever foul air may have been introduced, thus allowing contained germs to act upon any portion of the area which may have previously been diseased. In a like manner these coverings may not allow the excreted sebum proper expulsion, but assisting it in the formation of crusts which may in themselves produce disease that in an uncleanly person may proceed for a considerable time unnoticed until disease has actually spread beyond the outer borders of the depressed area, thus complicating what may have been only the most simple of conditions. As the part is bound down by the connections beneath the derma affected in its most central portion, it can readily be seen why attention should be continuously directed to this region for purposes of cleanliness, and so preventing the collection of any sordid or other obnoxious material which may have a tendency to produce either a simple dermatitis or a well-pronounced eczema of the part.

In those subjects where there is a protrusion rather than a depression we have a somewhat different condition confronting us, but in the main the part is arranged in a similar manner for the protection of the parts immediately beneath, and consequently shows the same rugous arrangement for self-preservation but does not show the enormous extent of sulci as found in the former variety. In the one instance we may witness the part raised only about one-sixteenth of an inch, but in the majority it is found to be protruded to one-half inch or even more above the surrounding portions of the abdomen; and this is governed by the size of the bearer, being more and more protruded as we encounter the still lesser dimensions. Naturally the part is not liable to the same amount of collections of sordid materials as the former variety, and consequently is the less likely to attacks of eczema; it should never be neglected for that reason, but should be inspected from time to time so as to prevent any superabundance of sebaceous collection in the form of crusts. One precaution that must be exercised in its behalf is to afford a certain protection from harm or bruising either from the clothing or in any other manner, thus preventing the formation of a dermatitis from which an artificial or true eczema may spring.

Now let us look for a short time upon the diseased areas, and as we notice the condition affecting the depressed umbilicus we find in the one instance that the skin has become attacked only in the sulci that are contained within the cavity, looking as it does more like an intertrigo than an eczema, but with a distinct weeping surface with some thickening and infiltration, and the slight or greater formation of crusts, all lying in the spaces between the folds, causing the exposure of numerous bleeding points upon the removal of the agglutinated material. This is rarely the extent to which the disease has progressed when it is our province to see it, but occasionally it does occur and therefore it is wise to be aware of its appearance. Usually when a case is brought to our clinics the condition has affected all of the depressed region and shows in addition to the diseased sulci an extension to even the summit of the folds, presenting a most disagreeable looking and

smelling part. It therefore presents a deeply reddened and moistened surface, with the formation of crusts in abundance, and some infiltration and thickening.

But unfortunately this is not the greatest extent to which the disease often confronts us, as many cases are brought before us wherein the condition has involved a much more extensive area sufficiently beyond the borders of the umbilicus to cause great alarm in the mind of the affected person. Besides the disease being found in the sulci and upon the summit of the various folds, it is likely to extend to one, two, or more inches beyond the borders of the most outer edge of the umbilicus; and as the condition involves the skin of this region in a manner similar to that affecting the enclosed portion of the umbilicus, it must be disagreeable in the extreme because of the great amount of discharge of a watery or serous nature, with the consequent formation of crusts which are continuously being detached and exposing a very greatly reddened and bleeding surface situated upon a thickened, infiltrated skin. The borders of the diseased area will be noticed to be fading into the surrounding healthy portion in the greater majority of cases, as is the usual manner of all forms of eczema; but in many of the cases this symptom will be entirely wanting, so that the borders will be rather abrupt, showing a distinct line of demarcation and hence complicating the diagnosis with other diseases of the skin of a much more chronic nature.

When the umbilicus extends or protrudes beyond the surrounding portions of the body the disease is rather of a milder nature when the umbilicus alone is attacked, because of the greater ease with which one may treat it; but it presents a condition similar to the former variety when the disease has spread beyond its borders, and consequently is just as annoying to the sufferer. Occasionally it may be found, when the disease has progressed far beyond the edges of the umbilicus proper, that the umbilicus has swelled to an enormous degree—possibly twice its normal size—thus complicating the condition still further, and giving much discomfort and pain, with sleepless nights.

The diseases which may at any time resemble this condition may be severally diagnosticated by symptoms which each in its process presents, and individually may be differentiated by the following rules: That eczema is a moist affection, showing at times throughout its course the usual characteristics of peculiar crusting, with a decided amount of infiltration and thickening, and a possible induration in long standing cases; that it has a tendency to fade into the surrounding parts rather than be abrupt; that the discharge is one of water or serum rather than pus; that if fissures do occur they have a tendency to self-healing; and its inherent tendency to superficial extension.

From psoriasis it may be differentiated because of its more acute nature; its tendency to moisture-crusting rather than scaling; its limitation to one portion of the body; and the intense itching.

From syphilis it may be recognized by the discharge of a serous rather than a purulent liquid; by a disagreeable odor rather than a foul-smelling stench; from the fact that syphilis is more likely to be confined to the depression, and to surround the edges by a serpiginous crawl rather than a diffuse extension; and by the peculiar color of the crust, which in syphilis is of a dark-brown color, and in eczema of a reddish blood-like character.

Pediculosis shows also distinguishing features in the fact that the lesions are more prone to be isolated and to be hemorrhagic puncta rather than a diffuse infiltration; to show the deposit of ova upon the surrounding hairs; and the possible appearance of dead or living pediculi.

In scabies the lesions do not limit themselves to this region, but may be witnessed elsewhere; but should we find lesions in this portion they would show their characteristic summit to the burrow, the peculiar tortuous outline, and the complication of vesicles or pustules with discrete crusting rather than a conglomerate mass of agglutinated material.

The treatment of this condition is generally confined in text-books to a few short lines, but unfortunately even these are not conclusive enough to give one more than a vague opinion as to what is the best plan of treatment, and consequently the condition, unless it should happen to fall into the hands of a dermatologist, is more likely to spread than to be checked in its career. But should one take into consideration the character of the condition, empirical measures may not be found amiss. First of all we have an inflammatory disease in which we may be confronted by some edema and exudation, with the tendency to the formation of crusts; its fading border, with the great desire to bleed upon the slightest provocation; and the intense itching which always accompanies the

condition. These latter symptoms may alone give one a cue as to what form of treatment is demanded, and after thinking one certainly can see that astringents are called for, with the addition of some palliative as well as an antipruritic; but oftentimes it will be seen when the condition has arrived at the chronic stage, and where the inflammation is more of a subacute character or rather quiescent, that some form of stimulant may be required first to present a favorable surface for the reduction of inflammation.

When the disease extends beyond the borders of the umbilicus we have recourse to astringent remedies in the acute or moist varieties, and of these we may find beneficial effects following the application of either calomel or acetanilid in the proportion of ten to forty grains to the ounce of the official zinc oxide ointment, or one-half ounce of this with an equal quantity of petrolatum or lanolin, applied twice or thrice daily to the part direct, or placed upon a linen cloth and then allowed to cover the diseased areas, being kept in position by some bandage. Should cases arise in which neither of these astringents will relieve or cure, sulphur, bismuth oxide, or one of the tarry preparations in the strength of one-half to one drachm to the ounce of one of the above excipients will often give decided relief and cure. This form differs little from any acute eczema upon other portions of the body, and like it we find those cases presenting a dried or chronic infiltrated or thickened appearance; but in the latter form it will be found necessary to advise the application of more stimulating remedies, and our choice will lie advantageously between resorcin, salicylic acid, salol, or possibly thymol in the strength of from ten to thirty grains to the ounce of an ointment base—with the exception of thymol, which may be advantageously advised in the strength of five grains to the same quantity —and placed upon the part in the most direct contact and covered with a roller. In those cases showing much swelling such lotions as a saturated solution of boric acid in water, or the black wash (three to ten grains to the ounce of lime-water), may be used with decided relief.

When the disease has been confined to the umbilical depression for some unknown time, then and then only will the disease give us much concern, and our choice of remedies will be demanded from those which will give us a favorable condition of the part to use curative drugs. All or most of the textbooks refer to the use of the application of nitrate of silver in solution, and I cannot but say that it has been judiciously chosen; but rather than confine myself to one remedy alone, knowing that one remedy often fails, I have studied the action of numerous others and find that some are at least just as effectual and often more beneficial than the silver caustic. The manner of applying the silver nitrate is in solutions of from ten to twenty grains to the ounce of oil, which retains it in contact with the diseased area for a proper time, naturally cauterizing the part to some extent; thus giving us a proper base for curative measures. But in my practice this has been found to give much pain in most of the cases, and for that reason I have looked around for remedies which would not be so likely to cause much discomfort, and have advised either resorcin or salicylic acid in many cases with good results. In applying the latter two drugs I have usually advised one or the other in the strength of forty grains to about two or three drachms of petrolatum or lanolin, which was to be kept in close touch with the affected portion for periods varying from two to three hours, when other and more curative measures may be adopted. In other cases I have received excellent results by using lactic acid in full strength, applied by means of an applicator upon the bleeding surfaces of the patch, and then following it with the application of one of the above mentioned astringents until the case was entirely cured.

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*THE SUCCESSFUL TREATMENT OF ECZEMA OF THE EAR.**

By B. Alexander Randall, M.A., M.D.,
Clinical Professor of Otology in the University of Pennsylvania.

In whatever part of the body it appears, eczema has an unsavory reputation for the innumerable forms which it assumes and the rebelliousness of most of them to treatment. The therapeusis of the affection is endless and still oftener unsatisfactory; and it is generally conceded that the aural manifestations are probably the most obstinate. Hence a discussion of this matter may have an interest to those who see much more of its localization elsewhere; and measures fairly successful here may have value to those who rarely see it about the ear.

* Read before the Section of Otology and Laryngology of the College of Physicians of Philadelphia, Dec. 1, 1896.

A group of differing affections may be ordinarily gathered under this one title when deserving separate names and consideration; and *Otitis externa diffusa* comprises several conditions generally distinguishable in causation and character; yet much in common can be seen in each of them, and it is to this rather than to any hair-splitting diagnosis that attention is here given. Otomycosis with manifest exuberant growth of aspergillus may seem a separate entity, for instance; but really the botanist rather than the surgeon is interested in the genus and species of the parasite, while those who regard all the eczemas as microbic in origin may truly be showing us that much of this is merely accidental. Each partisan of a theory may at least help on the successful treatment of these conditions; for he makes it clear that the parts involved ought with all possible speed to be made unfavorable hotbeds for the culture of such germs, whether pathogenic or accidental.

Yet the importance of local measures must not blind us to the influence of constitutional elements. A gouty diathesis is so common that we may pervert the old saying, "*Chacqu'un a son gout,*" and always make most careful inquiry as to the diet and life of the patient, and by medicine as well as regimen seek to lessen any such basis of the trouble. Without this the most perfect topical measures may prove futile or temporary. This aspect of the question should always lead us to scrutinize well the other ear, which may be thought to be unaffected; but this is a standing rule in otology. The evidences of its participation may be inconspicuous, but it is poor policy to overlook them. As to the local causes, it may be claimed that hardly any of the otorrhea cases escape some involvement of the skin surfaces, although the condition may be too secondary to merit any separate measures of treatment. When we look to statistical tables we find this group of affections set down at from five to ten per cent. of ear-affections, with wide individual variations as to its recognition. Add to these, as I think we rightly can, the cases of furuncular affections, and the proportion grows quite notable. These latter cases rarely fail to show evidence of previous itching of the meatus, in consequence of which the canal was scratched, in sleep if not in waking hours; and through the resulting abrasion was introduced the infection which inflamed the involved glands. As a prophylactic, therefore, as well as on its own account, such an eczema deserves treatment more careful than might otherwise seem necessary.

Antiseptic cleansing should constitute the first measure of treatment; and it had better be a little overdone than slighted. Irritation of the lesions is to be decidedly deprecated, and the choice and employment of cleansing agents deserves a full consideration of this factor: but stripping off of crusts and films of desquamating epiderm should sometimes be pushed to the limit of the patient's endurance, when the oozing surfaces seem to cry out against such violence. When we remember that the seat of trouble is often in the deeper layers of the skin, the futility of merely smearing medicaments superficially must be evident; not to speak of the intervening crusts and scales, which are alone the recipients of the applications in some instances. The macerations, poulticings and douches sometimes employed have generally seemed to me contraindicated; and the prejudice which I early imbibed against water in eczema has grown stronger with experience. Oil may do better, as is claimed, and the rejection of the petroleum products has probably little basis: but long use of hydrogen dioxide has shown it to better meet my needs, in spite of its watery menstruum, than anything else. It is rarely irritating in itself unless maintained needlessly long in contact; its antiseptic properties may be rather feeble in the test-tube, but are more real in the tissues than those of most of its rivals; and, most important, it seems to reach the needy spot with greater certainty than other remedies. It is very striking in some cases of almost invisible lesions to mop the surface with the commercial dioxide and see the slight manipulation faintly reveal congested patches beneath the surface. A few moments more of gentle mopping, and patches of dead skin, probably loaded with microbes and septic matter, start so conspicuously into view that it is hard to believe that they lie deeply buried beneath an apparently healthy surface. Unsuspected points or areas are thus demonstrated and, partly at least, disinfected and prepared to receive the further medication. When this consists of an ointment, as in most of the mild and chronic cases, it is instructive to see how long it is before the oily base of the preparation can be made to penetrate to the snowy points of diseased tissue and, by rendering their cells transparent, cause them to fade again from view. Measures like this or like silver in marking distinctly the extent and thorough-

ness of our treatment, seem to me very valuable. This triple function of the dioxide in aiding diagnosis, securing at least partial antisepsis, and in marking the completeness of the farther treatment, is shared by no other agent at our command; and I doubt if in any of these rôles it is excelled by any rival.

The real medication which follows must be adapted to the exact condition presented. In some of the acute, severe, and erysipelatous lesions we may do well to treat it with ichthyol, pure or, generally better, in twenty-five per cent. ointment locally, while exhibiting tincture of iron chloride in full doses internally. If moist, a solution of silver nitrate, two- to ten-per-cent., may be used as freely as the extent and aggravation of the lesion seems to justify. The astringent action and the protection of the albuminoid layer more than offset the irritation produced; but it may at first be safer to treat only limited areas thus. In the dry but irritable phases, calomel ointment, five- to ten-per-cent., has served me best; in the more torpid, yellow oxide of mercury or salicylic acid, two- to five-per-cent.; and in the most latent, sub-epidermal form, resorcin in equal strength. It has seemed to matter little whether these were made up with the various forms of petrolatum, with lanolin or with one of the more elegant, non-fatty bases. I have no complaint to make against any form of grease which is free from rancidity. But in the use of any of them, the vehicle which may be said to be most potent in carrying the medicament actually to the affected cells is what is sometimes called "elbow-grease." This is a principle coming into recognition among most dermatologists now, I believe—that personal application of the means to properly prepared surfaces is the most important factor in the treatment; in no other way can the limitations of intervention be intelligently complied with, the remedy so well selected, or so thoroughly yet unirritatingly applied; and while the length of time involved may seem a decided obstacle, experience will reduce this to a minimum compatible with the best interests of the case. It is surely better to give the time on a few occasions and win notable success, than to spread it over many sittings which profit little or nothing. Home application of the remedy selected may well be attempted as an addition to the skilled treatment, and may prove a good adjuvant; but much of the non-success in dealing with such affections may be laid to the charge of mere prescribing, or of inefficient employment by the medical man of medicaments potent for cure when really applied to the affected tissues.

In short, most of the commended local applications can be made efficacious by conscientious and painstaking use, with some care in selection, accompanied by rational internal medication for any underlying dyscrasia. But unless the practitioner uses both his hands and his head, his patient may about as well make his own choice of one of the proprietary articles so commonly advertised.

TREATMENT OF FRACTURES.

In an interesting paper on this subject, G. G. Davis, in the *Annals of Surgery* for December, 1896, reaches the following conclusions: 1. Massage and passive motion are not used to the extent that they should be in the treatment of fractures. 2. Immobility of the fractured ends favors quick union with little deformity. 3. There are some cases in which, owing either to peculiarities of the fracture or to impaired constitution of the individual, the tendency to the formation of callus is marked; motion in these tends to the formation of exuberant callus and deformity. 4. There are others in which bony union is unduly delayed; disturbance of the fractured ends in these hinders union. 5. It is wise to wait until the fractured parts are glued together, usually eight or ten days, before attempting any except the lightest massage, and any extensive passive motion after that time should be used carefully but diligently. 6. Passive motion and massage when first attempted should be of the most gentle character, and not so violent as to disturb the relation of the broken bones. 7. Marked pain and inflammatory reaction following passive motion and massage are evidences that it has been too violent. 8. The limb should receive massage and manipulation at each inspection or change of dressing, often daily. 9. In some cases it is advisable to administer such massage as is possible without removing the splints. 10. Persistent stiffness, particularly in fractures or injuries of the wrist, is often due to a rheumatoid affection locating itself in the injured region. Massage is valuable in the treatment of such a condition. 11. Massage should be given to the parts of the limb that lie beyond the seat of the fracture, to keep them in a normal condition. 12. Such dressings and methods of treatment should be adopted as will allow of the greatest use of massage and passive and active movements consistent with proper retention of the fragments.

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Leading Articles.

A WARNING.

A physician, giving the name of Dr. A. L. Perry, has been calling on physicians collecting subscriptions for the THERAPEUTIC GAZETTE and then failing to remit these subscriptions to the publisher.

All persons are therefore warned against paying him any money due for the THERAPEUTIC GAZETTE.

THE VALUE OF THE OIL OF GAULTHERIA AND THE BEST WAY OF EMPLOYING IT IN THE TREATMENT OF RHEUMATIC AFFECTIONS.

From the time at which the salicylates were first introduced into medicine for the relief or cure of rheumatic affections, until the present day, one of the chief objections to their employment in effective doses has been the fact that they seriously disturb the digestion of the patient. To such an extent has this objection to their use been found to exist that many physicians are loath to employ the salicylates, and when they are forced to give them, are so governed by the fear of this untoward influence that they administer doses which are insufficient to produce the therapeutic influence which is desired. The profession, therefore, is very ready to take up and employ any new method, or drug, by which they will avoid disturbing digestion, and it was thought at one time that in the oil of gaultheria, which contains over ninety per cent. of the salicylate of methyl, an efficient substitute for salicylic acid and the salicylate of sodium had been found. So far as we know the first careful clinical and physiological study which was made of the oil of gaultheria, particularly in connection with its employment in rheumatism, was that by H. C. Wood and the writer of this editorial in the latter part of 1885, their paper being published in the THERAPEUTIC GAZETTE in February, 1886.

It was found, as was expected, that the large percentage of salicylate of methyl contained in the oil of gaultheria had exercised a very positive influence for good in those cases of rheumatism which are usually benefited by other salicylates; and, further, that its physiological action was practically identical with these remedies. Further experience with the oil of gaultheria, however, while it supported the view that it exercised a beneficial influence in rheumatism, showed that it disordered the digestion quite as frequently as did the other salicylates, and for this reason it has not become particularly popular. Indeed there are some patients who, after taking both remedies, much prefer the salicylate of sodium or the acid to the oil of gaultheria. It has, however, been recognized as a fact for a number of years that the volatility of the oil of gaultheria rendered it easy of absorption by the skin and the respiratory mucous membrane. Quite ten years ago Randolph showed that, if oil of gaultheria was placed on a sponge which in turn was placed in an inhaler, in a very short time the reaction of salicyluric acid could be obtained in the urine upon the addition of perchloride of iron, proving that the drug was rapidly absorbed from the respiratory mucous membrane and rapidly eliminated. He also found that the use of the oil of gaultheria in an ointment applied externally resulted in its absorption and the appearance of a characteristic reaction in the urinary secretion.

Our attention has been called to this mat-

ter once more by the paper of Lannois and Linossier in *Lyon Médical* for September 20, 1896. These authors, after recalling the fact that they have demonstrated the absorbability of the salicylate of methyl through the skin in the early part of this year before the Academy of Medicine in Paris, record twenty-four cases of various forms of rheumatic affections which they have treated by the external application of this drug, and their results are such as to encourage them to continue this method of treatment, although it is a noteworthy fact that in the majority of their cases the conditions present were not such as are generally most favorable for the administration of the salicylates. Thus only four of the twenty-four cases suffered from acute articular rheumatism; in eleven the rheumatism was articular but subacute; in seven it was chronic and associated with deformity; and in two the rheumatism was gonorrheal. Curiously enough, they assert that in both of these last cases this treatment did good, although it is the universal experience of the profession that as gonorrheal rheumatism is septic in origin, and not due to the ordinary causes of rheumatic affections, the salicylates are perfectly useless.

The method which they have followed in the application of the oil is as follows: The part which is affected is surrounded by lint which has been moistened by the application of one or two teaspoonfuls of the oil; this is then surrounded by a sheet of gutta-percha, and the entire limb carefully wrapped in an outside bandage, which is applied in such a way as to prevent the heat of the body from vaporizing the drug and permitting it to escape into the air, while the bandage also softens the skin and in that way aids in the absorption of the remedy. Under these circumstances these clinicians claim that the pain is rapidly relieved, that the swelling decreases, and, as an evidence of the physiological action of the drug, that headache or fulness of the head, with throbbing of the ears and other characteristic symptoms of cinchonism, speedily appear; and, further, that in the course of so short a time as half an hour the salicyluric acid reaction may be obtained in the urine. In the course of eight or nine hours the greater quantity of the salicylate of methyl which has been applied to the limb is absorbed and eliminated, total elimination being accomplished in twenty-four hours and relief of the symptoms produced usually earlier than eight hours; the temperature also falls, and the general condition of the patient markedly improves.

Locally this treatment may produce reddening of the skin, and if it is continued for some time, actual desquamation of the cuticle; but this is not painful since anesthesia is developed in much the same way as follows the application of guaiacol.

Considering the difficulty that is met with in the treatment of rheumatism, not only through the causes that we have named, but also from the fact that in many instances the disease is singularly persistent and resists all our remedial measures, we have thought that our readers would be interested in the results obtained by these French investigators.

THE TREATMENT OF INTUSSUSCEPTION BY NON-OPERATIVE MEASURES.

In *Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases* for January, 1897, there is to be found an interesting paper upon this subject by Dr. Pynchon of Chicago, in which he discusses the treatment of intussusception by what he calls colono-enteric irrigation. He records the case of a girl of fourteen in whom he found an intussusception and to whom he gave relief by irrigation, a method which has been quite heartily recommended heretofore in the editorial columns of the THERAPEUTIC GAZETTE. Pynchon describes a very useful home-made operating apparatus by which he placed the patient in the position most suitable for her relief under irrigation. In the centre of the room he inverted a high-back dining-room chair so that the top of the back rested upon the floor, and under the front edge of the seat he placed a boot-blacking stand with some large books thereupon in order to make a support of sufficient height to permit the back of the chair to slope at an angle of about seventy-five degrees. He next placed over the chair a bed-bolster and covered this with an old quilt folded lengthwise about six times. The patient was then quickly anesthetized and suspended over the chair face downward with her head near the floor and her thighs well secured between the legs of the inverted chair, the condition of anesthesia being kept up during the entire procedure. A fountain syringe was then filled with water heated to about 110° F., and the bag was hung up as high as the ceiling of the room would allow, although Pynchon asserts that

he would have liked, had the patient been on a lower floor, to have lengthened the tube and to have hung the bag still higher. He also enlarged the opening in the rubber tip of the syringe so as to increase the rapidity of the flow of water into the bowel. Active massage of the belly walls was practiced. This flow of water was continued until, as Pynchon states, his efforts were suddenly crowned with success by a violent gushing of water from the patient's mouth, when the operation was stopped.

In the conclusions of his paper Dr. Pynchon points out that the rectal tube should be of such shape as absolutely to control the escape of water from the rectum; that no air must enter the gut; and that abdominal massage should be alternated with the onward flow of water.

Finally he states that the fall of water may vary from fifteen to thirty feet, according to the age of the patient and the stage of the trouble, providing that a lesser fall of say six feet, in alternation with massage, is not successful.

We have called attention to Dr. Pynchon's article for two reasons: first, because we desire to emphasize the importance of intestinal irrigation in the treatment of intestinal obstruction; and, secondly, because we are forced wholly to disagree with the last conclusion at which the author has arrived. About ten years ago Dr. Nicholas Senn stated, as the result of experimental investigation, that it was possible by injecting water into the bowel under considerable pressure, to do serious damage to the peritoneal coat of the bowel, and for this reason the pressure recommended in the paper which we have quoted is far too great. There are very few intestinal walls which would stand a hydrostatic pressure of thirty feet, and a patient exposed to such a pressure would be seriously endangered. We speak of this matter advisedly, for in 1890 the editors of this journal were awarded the Fiske Fund Prize of the Rhode Island Medical Society, for an essay in which this subject was carefully discussed after a series of laboratory and statistical studies. In these studies it was found possible to pass water from the anus through the pyloric end of the stomach and out through the esophagus by a pressure not exceeding that produced by a water-bag held at from eighteen inches to two feet above the abdomen of the animal. It was further found that a greater pressure than this was capable of doing harm, and that it was not so much a question of the degree of pressure as it was its continuance. Every one who has dealt with muscular fibre knows that the way to overcome its resistance is by gradual pressure continuously applied until the resistance is exhausted. While on the other hand, if we attempt to overcome muscular resistance by the application of great force, the spasm is apt to continue through irritation, and the patient is not benefited. The proper way, then, to use intestinal injections for the relief of intussusception is to anesthetize the patient, to place him in the position recommended by Dr. Pynchon, and then to allow the water to trickle into the bowel so slowly that by the gradual application of its force the obstruction is overcome. We repeat that while we heartily agree with Dr. Pynchon's recommendation as to the general plan of treatment in these cases, we must entirely disagree with him as to the height at which the water-bag should be placed.

THE INFLUENCE OF CHLOROFORM ON THE VASO-MOTOR SYSTEM.

In the report which the Editor of the GAZETTE submitted in the spring of 1893 to the Government of his Highness the Nizam of Hyderabad, upon the action of chloroform, and which was published in the fall of that year in the THERAPEUTIC GAZETTE, he emphasized his belief in the fact that in the great majority of cases the danger from chloroform lay in its powerful and primary depressing influence upon the vaso-motor centre, and urged upon the profession the recognition of the fact that an intact vaso-motor apparatus and a normal arterial pressure are as necessary to the maintenance of life as an intact cardiac mechanism. This view he has reiterated again and again in the columns of the GAZETTE, in his "Text-book of Practical Therapeutics," and in an article upon Anesthesia in Park's "System of Surgery," and lastly in an article in the original columns of this issue. Yet another time he has called attention to the importance of the normal vaso-motor tone in the diagnosis and treatment of disease in an article in the THERAPEUTIC GAZETTE during 1896, and he now once more calls attention to this fact, which he believes is still too much ignored by the profession, namely, that chloroform exercises its chief danger through its vaso-motor influence.

The reason that he has for once more

speaking of this matter is not only its importance but because of the confirmation which his views have had through the publication of an exceedingly interesting monograph by Mr. Leonard Hill, of London, in which are published the results of "An Experimental Research upon the Physiology and Pathology of the Cerebral Circulation," a research which was also embodied in the lectures which he delivered as Hunterian professor at the Royal College of Surgeons in February, 1896. After stating that all the tracings which he has ever seen taken from animals under chloroform, and particularly those taken by the Hyderabad Commission, show enormous falls of blood-pressure before respiration ceases, he points out that the failure of respiration is obviously due to the anemia of the respiratory centre which is produced by the fall of blood-pressure; and he has confirmed this view by his own experiments. He then goes on to state the fact that the primary and vital danger from chloroform is failure of cerebral circulation, which he asserts stares one in the face in every one of the tracings made by the Hyderabad Commission.

Again, he points out that respiration generally stops before the heart does because if the head is above the level of the heart the cerebral circulation will cease before the circulation in the coronary arteries; and the practical result of his studies is that abdominal compression immediately removes the effect of the vaso-motor paralysis, and that not only should compression be used, but also the abdomen as well as the limbs should be elevated and bandaged, in case of chloroform accident or where chloroform accident is feared. Neither can the injection of normal saline be of much benefit to the patient suffering from a chloroform accident, for as long as the splanchnic flood-gates are open, allowing all the blood to stagnate in the large abdominal blood-vessels, the addition of saline solutions simply increases this engorgement without materially increasing the quantity of liquid which goes to the brain. These are the reasons why so many deaths have occurred from chloroform when it was administered to the patient sitting erect. These researches also explain the well recognized clinical fact that the administration of atropine, which is our best vaso-motor stimulant, tends to prevent chloroform accidents.

We commend this research to our readers as one which cannot fail to impress them as a valuable contribution to the subject of which it treats.

PHARMACOPŒIAL PREPARATIONS OF DIGITALIS.

Under the above heading there appeared in the Philadelphia *Polyclinic* of January 2 an interesting article which was written at the request of the Editor of that journal, who expressed the hope that further discussion of the questions therein treated should be entered into. The readers of the GAZETTE have a vital interest in all matters pertaining to the activity and reliability of drugs, and the Editor at once asked a well known pharmaceutical chemist to write his views, which are appended. We therefore take the liberty of offering some opinions which are the outgrowth of several years of experience in handling digitalis preparations. We do not think we are wide of the mark in summing up the conclusions arrived at by the author of the above article as follows:

1. The tincture prepared by diluting a fluid extract is therapeutically less active than one made by the official method.

2. The infusion made by diluting the fluid extract with water is a different product from the official infusion.

3. The fluid extract of digitalis is not a rational or advisable product, because of variation in activity and because it will not contain the whole of the active principles of the drug.

4. The commercial German leaf should be replaced by the more powerful cultivated English leaf.

5. The claims of manufacturers of "so-called standardized" fluid extracts should be looked upon with suspicion.

We think that a tincture *can* be made by diluting the fluid extract, which will be equal in every respect to one made by direct percolation of the drug. This statement presupposes that the fluid extract diluted shall contain all the medicinally active constituents of the drug from which it was prepared. That such a fluid extract is easily obtainable we shall prove later.

If the fluid extract be prepared by the U. S. P. menstruum (63 per cent. (approximate) alcohol), and the diluent be the U. S. P. tincture menstruum (47½ per cent. alcohol) there will be a slight precipitation, but such precipitation will consist almost wholly of inert extractive matter; even this precipitate may be avoided by employing a diluent which contains sufficient alcohol.

If the fluid extract happens to be one prepared by some "pharmaceutical manufac-

turer" there will be found on the label a formula for preparing the tincture, which directs the use of a diluent of the *same alcoholic strength as the finished fluid extract*, and with which the latter will be almost or perfectly miscible.

The writer referred to does not lay so much stress upon the possible precipitation of active constituents as upon the supposition that "the fluid extract and tincture contain most probably all four principles,"* but in view of the dissimilarity of menstrua and process, in *different relative proportions.*

If this supposition be correct we are laboring under a great delusion, and we think the compilers of the Pharmacopœia are at fault, because we believe that it was intended that in all instances the fluid extract and tincture of the same drug should contain the same active constituents, in different *quantity*, but not in different *relative proportions.* If this were not so the drug would not be exhausted of its principles, and the preparations would not be true fluid extracts or tinctures.

It makes no difference whether the active constituents of 1000 grammes of drug be disseminated through one pint of liquid or through ten pints, they exist in the same *relative* proportions.

The reason why a tincture menstruum is made weaker than the corresponding fluid extract menstruum is that the former makes up its lack of solvent power per cubic centimeter by a corresponding increase in volume.

The conclusion that the preparation of an infusion by diluting the fluid extract is both dishonest and inexcusable, commands our hearty endorsement; this becomes a plain case of substituting a preparation of different physiological effects from that of the one ordered.

When digitalis is extracted by an alcoholic menstruum of proper strength, *all* of the active constituents of the drug are dissolved; when the drug is extracted by warm water certain of the active principles (digitonin and digitalein) enter into solution, and the greater part of the undesirable ones (digitoxin and digitalin) are left in the marc. The great difference between the two preparations becomes at once apparent when the effects produced by their administration are compared.

We do not think fluid extract digitalis should be regarded as irrational because of variations in activity of commercial samples. All fluid extracts are open to this criticism, and the only remedy for such variation as may be due to natural causes and to faulty manipulation is to subject the finished product to some process whereby its activity may be estimated and properly regulated. As such process is beyond the means of the average pharmacist, in the case of digitalis he may take comfort in the fact that if he applies the U. S. P. process skilfully, and assures himself that his drug is of good quality (as indicated by its physical properties and the price), he will obtain a fluid extract which will in nearly every instance satisfy his medical patrons.

If the pharmacist uses inferior drug, and the manufacturers of "50-cent" fluid extracts follow his example, it will not mend matters to discard the stronger preparation, because both will continue to use the same drug in preparing tinctures and infusions.

Neither should we discard the fluid extract because it appears impossible to make it of the full theoretical strength. As above intimated, the U. S. P. product seems to meet most demands; but if the physician desires a fluid which fully represents the drug, one in which no heat has been employed, he can easily obtain it in a "commercial product," made by a reputable manufacturing chemist, of the choicest drug, by the process of repercolation, and the activity of which has been measured by physiological tests on animals.

We do not concede the advisability of discarding the commercial or "German" leaf for the specially prepared, cultivated English drug. The best grade of fluid extracts on the market are powerful enough; and any advantage, if there would be any, gained by employing the cultivated leaf would hardly offset the increase in cost of crude material. If it were desirable to employ the most powerful drug we should specify the *Digitalis ferruginea*, which is said by Goldenburg to possess ten times the activity of the *D. purpurea.* The British Pharmacopœia specifies "leaves of *Digitalis purpurea* gathered from the wild plant of the second year's growth."

We suggest that the proper remedy lies in exercising more care in selecting a prime quality of commercial drug.

Manufacturers usually confine their claims of assay to a statement that the fluid extract contains a certain percentage of "extractive." This *standard* is of value only in that it insures the thorough extraction of the drug employed.

The active constituents of digitalis are glucosides, which are of such delicate con-

*Digitalin, Digitoxin, Digitonin and Digitalein.

stitution that they cannot be extracted and estimated by chemical means such as are ordinarily employed in standardizing toxic drugs. There is a method by which the preparation of this drug can be valued and consequently adjusted, viz., to test them *physiologically,—to make their action as developed in animals, when administered in proper proportions, the measure by which to compare them with standard samples applied in like manner.*

Such testing is expensive and requires skilled operators, but the cost sinks into insignificance when we consider the importance of positive assurance as to the activity of the product.

To recapitulate, we think that:

The fluid extract of digitalis, skilfully made by U. S. P. directions, using good drug, is powerful enough for all practical purposes.

By the employment of prime commercial drug, the repercolation process, and testing by physiological means, a fluid extract is produced which is beyond criticism.

The substitution of expensive cultivated drug for the commercial wild-grown article is unnecessary provided due care be exercised in selecting the latter.

As some pharmacists and some manufacturers of pharmaceuticals habitually employ the cheapest drugs the market affords for the manufacture of fluid extracts, they would employ the same drug for the preparation of tinctures, were the more concentrated fluids abolished.

As far as we know, there is only one reliable method of determining the activity of this drug, or its preparations, viz., physiological testing.

The preparation of infusion from fluid extract is irrational and unjustifiable.

A tincture may be prepared from the fluid extract equal in every respect to that made by the official process, provided the fluid extract is of full strength, and provided the diluent contains sufficient alcohol.

SYPHILIS OF THE KIDNEYS AND ITS TREATMENT.

Until recent times it has been a commonly accepted belief in the profession that symptoms and signs of nephritis occurring during the course of syphilis are due rather to the medicines taken for the cure of the constitutional disorder, particularly mercury, than to the direct or remote effects of the syphilitic virus. This teaching probably dates from Rayer. In the last few years the journals have contained many reports of renal involvement occurring in the course of syphilis apparently quite independent of mercurial treatment, and it is deemed established beyond controversy that the kidneys may be attacked both in the secondary and tertiary stages of the disease.

The frequency with which such involvement occurs has, however, by no means been determined, and the writings of those who have devoted most time and attention to this subject throw little light on this matter, since their conclusions vary widely.

Geraud reports albuminuria in twenty-one out of forty-six cases of syphilis, all in the primary; eight in the secondary; and two in the tertiary stage. Antisyphilitic treatment caused disappearance of the albumen. Harrison states that albuminuria occurs in from three to eight per cent. of all cases of secondary syphilis. Peterson holds that the kidney is affected during the secondary stage in four per cent. of cases. Wagner found sixty-three cases of syphilitic nephritis in 9000 autopsies. It is thus evident that no reliable estimate can as yet be made as to the frequency of renal involvement.

The symptomatology is, however, clearly understood. Early secondary syphilis of the kidney develops usually about two or three months after a chancre, the first symptom often being edema or unusual frequency of urination. Associated with this there may be headache and general digestive disturbances. The urine on examination shows albumen, blood, and epithelial, and hyaline and granular casts. Under treatment resolution is prompt; without treatment the acute nephritis is likely to become chronic.

The pathological changes are those characteristic of acute nephritis. The affection seems to be vacillating, and in its course closely resembles scarlatinal nephritis.

The late nephritic lesions are characterized by symptoms absolutely like those of chronic nephritis. Pathologically the kidneys are found to show amyloid degeneration, interstitial inflammation, and the development of gummata; these various changes are often associated. The amyloid change seems to be the most common one.

Welander (*Archiv für Dermatologie und Syphilis*, band xxxvii, heft 3), after an exhaustive study of the question concludes, in regard to nephritis of secondary syphilis, that although a slight specific albuminuria may occur with the outbreak of secondary syphilis or during recurrences in this period, this

is rare. It is very rare to find an albuminuria demonstrable to nitric acid, and it is extremely doubtful whether this is really a symptom of parenchymatous nephritis. As to the later periods of syphilis, occasionally there develops an interstitial nephritis, under such circumstances that causal relation between it and the specific constitutional disease is probable.

In the later period of the disease there occurs in exceptional cases an afebrile kidney affection characterized by a dirty-brown turbid urine containing a slight amount of albumen, blood, and epithelial cylinders and a large quantity of detritus. This affection of the kidney occurs when gummata are breaking down in other portions of the body, and diminishes and disappears under specific treatment, together with the other tertiary symptoms. It is probable that it is due to breaking-down gummata in the kidney.

Mercurial treatment, especially when it is pushed, causes cylindruria, at times albuminuria, which may be slight or severe according to the idiosyncrasy of the patient. The absence of cylinders and albumen in the urine does not show failure to absorb mercury. It is only by examination of the urine and the feces for mercury that the amount which is absorbed can be determined. The cylindruria and albuminuria caused by mercury are transitory and do not predispose to subsequent kidney affections.

When nephritis has developed, especially the parenchymatous or the interstitial variety of the disease, mercury must be given cautiously; during the course of nephritis mercury is eliminated largely through the feces, at times abundantly through the kidneys, but always to a minimal extent through the saliva.

The prognosis of nephritis occurring during the secondary period of the disease is nearly always favorable. Tertiary nephritis, if of a gummatous type, yields as promptly to specific treatment as do gummata in other parts of the body. When degeneration has proceeded to complete destruction of secreting substance there can be no restoration of tissue, and specific treatment avails only in preventing further extension of trouble.

The communication of Welander again raises doubts in regard to therapeutics which seemed in a fair way to be cleared by recent records of renal syphilosis. His conclusions, based on a thorough study of the matter, seem to show that nephritis due to secondary syphilis is rarer than that occasioned by full doses of mercury. The important lesson to be drawn from the study is that examinations of the urine should always be practiced in cases of syphilis; that when albuminuria and cylindruria are observed the practitioner should carefully consider as to whether this is not due to drugs rather than to the disease for which the medicine is administered; that toxic effects occur readily when the kidneys are crippled, and hence mercury must be administered with extreme caution. It seems scarcely necessary to state that in addition to specific treatment cases of syphilitic nephritis should receive the hygienic and hydrotherapeutic and medicinal care appropriate to inflammation of the kidneys when it is due to other causes.

Reports on Therapeutic Progress

EXPERIMENTAL RESEARCH INTO THE ACTION OF VIBURNUM PRUNIFOLIUM (BLACK HAW).

SHENNAN contributes the results of a literary and experimental study of this drug to the *Edinburgh Medical Journal* for November, 1896. He concludes that in habitual abortion not caused by syphilitic infection or by fatty placenta, undoubtedly good results seem to follow the use of *Viburnum prunifolium*. In threatening abortion, whatever the cause, and at whatever period of gestation, if the case is got soon enough, it seems to be very successful. In dysmenorrhea, functional, spasmodic, ovarian, or attended with menorrhagia, it often cures; if there is flexion or stenosis it gives great relief, though of course it cannot cure. In the menorrhagias and metrorrhagia of the menopause and in the nervous disorders of that time it is very beneficial. After-pains are so readily relieved by it that some (*e.g.*, Auvard) consider that its use is dangerous unless all clots are cleared out of the uterus previously. It may be used in the diagnosis of false pains, speedily relieving them. It is also used with success in colicky diarrhea and in dysentery. Some even claim that it has a curative effect on cramps of voluntary muscles.

In his experimental tests he found that in mammals, warm-blooded animals, owing to the difficulty of giving a large enough dose hypodermically, there is no marked effect, except drowsiness and some lessening of motor power. If the substance be introduced into the heart directly, there is rapid lowering of blood-pressure to about one-half the nor-

mal, with slow return to near the normal as the drug is eliminated.

Although too much reliance must not be placed on experimental results in cold-blooded animals, including man, we may be allowed to take something from these results and use them as probably applicable. Thus, there is probably some diminution of reflex irritability, a quieting effect on involuntary muscle, possibly some lowering of blood-pressure—which even though small, might afford relief in congested conditions. Then—a very important point—there is the effect of the valerianic or viburnic acid in neurotic and hysterical conditions.

In the Pharmacopœia there are many drugs capable of bringing about all these desired effects. Why, then, use *Viburnum prunifolium*? Opium is one of our sheet-anchors, but then there are dangers and inconveniences attending its use: the patient may acquire the opium habit; the constipation caused by it is very troublesome, and it is very toxic. Viburnum has similar good effects, though not so powerful; it is a good form in which to administer valerianic acid; its effect upon unstriped muscle, though not so great as that of opium, gives the relief necessary; and it has scarcely any effect in causing constipation.

Toxic effects have only been noticed with very considerable doses. Herrick has seen disturbance of vision, dryness of mouth, headaches; and Wilson has observed similar conditions, but these followed doses larger than are usually administered.

NOTES ON THE EVOLUTION OF TREATMENT OF UTERINE FIBROIDS.

In a paper contributed by JOHN WALLACE to the *British Medical Journal* of October 31, 1896, the writer lays down the following propositions in connection with this subject:

Uterine fibroids had a trivial mortality compared with ovarian tumors in the times when both were left alone, or tapping only was resorted to. Death was almost invariable in the one, and rare in the other.

The same law holds now, but ovariotomy has stepped in and the mortality has been reduced by over ninety per cent., while on the other hand supravaginal hysterectomy has enormously increased the mortality of uterine fibroids. What the percentage has been we shall never know, but it has been great.

Uterine fibroids are subject to degenerative changes—fatty (the most frequent), myxomatous and cystic (the next frequent), sarcomatous (which probably existed from the beginning), and calcareous—the rarest of all if we except the carcinomatous, which the writer has never met.

In uncomplicated uterine fibroids, avoid all surgical interference, and trust to protecting the tumor from injury. The better the patient's health, the less the tumor grows. Deobstruents of calcium chloride, potassium, or sodium bromide, with syrupus ferri iodidi, have again and again reduced the size of large tumors. This view has been forced upon the writer by observation. The climacteric is invariably accompanied by atrophic changes, and in one instance a tumor—the largest he ever watched—reaching as high as the ensiform cartilage, became as small as a mandarin orange.

Large fibro-cystic tumors never atrophy, but their tendency is to increase in size. Extirpation is therefore the rule whenever their nature is ascertained.

Surgical interference is demanded: (*a*) in fibro-cystic growths; (*b*) in sarcomata in the early stages if possible—the longer the tumor is left, the greater the risk of recurrence; (*c*) in cases where the tumor permanently interferes with the action of bowel or bladder, with or without pain, or inflammation giving rise to adhesions to superincumbent and pelvic viscera; (*d*) when ascites is a sequela, or when, from overdistention, direct or reflex symptoms arise which imperil the cardiac function or in any way threaten the life of the patient. Small fibroids sometimes give rise to chronic peritonitis and ascites, necessitating extirpation; and necrosis of a tumor from injury or impaction necessitates immediate extirpation.

Hemorrhage alone does not demand extirpation by laparotomy. It can always be checked. The writer has never seen a case succumb to it, but if it is accompanied by pain, inability for life's work, etc., it may justify operation at the request of the patient, but it would not justify the surgeon in recommending it.

Fibroid uterine tumors may complicate pregnancy and have to be removed by vaginal hysterectomy when obstructive, or by abdominal section. They take on the increased growth of the impregnated uterus, and grow rapidly, but either the uterus overreaches and controls them, and pregnancy goes on to term, or abortion results. Although laparotomy and extirpation during

pregnancy has been successful, it is not an operation to be recommended generally.

If tumors can be removed by vaginal hysterectomy, with well marked symptoms as a justification—for if you give Nature time she often expels them—the direct operation by incision of the capsule, enucleation, and avulsion by torsion, ecraseur, or scissors, is to be speedily done. The old plans of opening the capsule by potassa fusa (Simpson and M. Duncan), and incision and waiting in expectation of expulsion by uterine contraction, have been abandoned. Failure, or septicemia, a hurried attempt at extirpation, and success uncertain—such were the results.

The abandonment of the ligature of the pedicle, and the substitution of the clamp, retarded the advance of ovariotomy for twenty years. Its reintroduction upon true surgical principles, the flushing of the abdominal cavity with abundance of warm water not even sterilized, and perfect drainage, have made ovariotomy a simple and safe operation in normal and uncomplicated cases. In hysterectomy the existence of a pedicle long enough was but rarely met with, and consequently in the early days the abdomen was often enough opened and closed and the case declared unfit for further interference. Koeberlé's ecraseur deposed the clamp where a short pedicle of the uterus permitted the wire to be tightened up and the hemorrhage controlled. But even that method proved clumsy in most instances, unfit and unsurgical, for it left a sloughing mass in contact with raw absorbing and peritoneal surfaces, and so gave rise to septicemia and death.

The pampiniform plexus, enlarged in some cases to the thickness of the wrist, the opening of which would be as immediately fatal as dividing the vena cava, has to be ligated by opening the capsule of the tumor, and detaching it so as to get the finger behind the vessels. Two ligatures are applied, and the vessels are divided between them. This is done on both sides. In a typical case the tumor occupies the whole of the plane of the pelvic brim. Taking care to avoid bladder and colon, cecum and sigmoid flexure, a circular incision is carried round the tumor, the lines of incision meeting at the place where the capsule was opened for the ligating of the vessels. Enucleation is now carried out; the uterine clamp (Dr. Wallace's) is then applied over the stump of uterus or cervix, and the tumor is cut off by a probe-pointed bistoury and so got out of the way. Any vessels are now picked up and tied, and the parts well flushed with warm water. The intestines are held in position by an apron of antiseptic gauze, and the long abdominal incision partly closed by vulsellum forceps, etc. The broad ligaments are then brought together by catgut sutures in the middle line, right up to the abdominal incision and about an inch from its lower extremity. Thus a new Douglas' pouch is formed, and the stump of the uterus and bladder are left outside the peritoneum in a separate compartment. After flushing until the warm water comes back as pure and clear as when introduced, a glass drainage-tube is introduced into both cavities, the peritoneal and extraperitoneal, and the patient is placed in the prone position for twelve to twenty-four hours, or until the drain has nearly ceased. The ovaries may be taken or left. The principle is, not to increase the surgical extent of the operation.

An incision is made through the capsule, detachment is carried out, the pedicle of vascular supply ligated, and the tumor cut off with scissors. The pouch may be stitched to the lower end of the abdominal incision; it takes the part of the extraperitoneal compartment referred to.

When extirpation of the uterus and tumors for persistent urinary retention, pain, invalidism, or excessive hemorrhage, is to be performed, drag up the uterus and tumors from the pelvis; apply Wallace's clamp; ligate the ovarian and uterine vessels on both sides, *pari passu*, and divide each ligated portion of the broad ligament, including the vessels, before tightening up the next ligatures, one on each side—three ligatures on each side of the uterus are usually sufficient; then cut through the intraperitoneal portion of the cervix uteri, above the clamp; seize the stump with forceps, tentatively undo the uterine clamp and see that all bleeding has been controlled—if not, ligate the bleeding vessels; bring the broad ligaments together, make an extraperitoneal compartment, and flush and drain in the usual way.

Cystic ovarian tumors kill, as a matter of certainty, if left alone; ninety per cent. recover after operation, and ten per cent. die.

Fibro-cystic tumors of the uterus are less frequently met with, but are equally fatal if left alone.

The true fibromyomata, uncomplicated and giving rise to no symptoms, may safely be left to the *vis medicatrix naturæ*, and thankful we ought to be that they form the great bulk of uterine fibroids. They take on fatty degeneration and atrophy during involution

of a large uterus after delivery; under deobstruent treatment, though rarely; at the menopause, and after, invariably. Those that do not, do not belong to this class of tumors.

THE TREATMENT OF OTORRHEA AND ITS IMPORTANCE.

DENCH, one of the most progressive of modern otologists, has a paper with this title in the *Medico-Surgical Bulletin* of November 14, 1896. He first considers drainage and syringing, and asserts that while much has been written in favor of securing drainage by strips either of iodoform gauze or of some other antiseptic gauze, inserted into the canal as far as the membrana tympani, his opinion is that this procedure is not applicable in the majority of cases, and his experience has proved it to be so unsatisfactory that he no longer employs it. If these strips of gauze could be frequently changed, the measure would no doubt effect its purpose, but this is obviously impossible, either in private or hospital practice. He therefore prefers the old method of removing the discharge from the canal by the frequent use of the syringe, the irrigation being repeated as often as is necessary to keep the canal free of discharge.

Although it seems a very simple matter to syringe an ear, the operation is seldom done properly by the layman, and is not always successfully performed even by the physician. The fountain syringe is not adapted to the purpose, and either the ordinary piston syringe or soft-rubber bulb syringe should be used. As the removal of the accumulation in the canal is a purely mechanical process, a certain amount of force must be used in injecting the irrigating fluid. As the meatus is formed by two tubes, joining at an angle in both the horizontal and vertical planes, the deeper portion of the canal cannot be cleansed by a column of fluid unless these angles are obliterated and the axes of the two portions are brought into the same straight line. This is effected by drawing the auricle upward, backward, and outward, during the operation; by this manipulation the fibrous meatus is made to conform to the direction of the bony canal.

It is also important to remember that the tip of the syringe must be introduced into the meatus, instead of being held close to its mouth. Care should be taken that the force applied in expelling the fluid from the syringe does not crowd the tip of the instrument against the walls of the meatus. The portion of the syringe introduced into the canal should be absolutely immovable, as otherwise the meatus may suffer from traumatism.

It is also to be borne in mind that in infants the bony meatus is absent, and that the inferior wall of the canal lies in contact with the superior wall. In order to convert this passage into a fibrous tube the walls must be separated by traction upon the auricle in the direction downward, backward, and outward, as in the adult.

The quantity of fluid to be used at each irrigation varies somewhat according to the character of the discharge. Usually half a pint is sufficient for the purpose of cleansing the meatus.

We are next to consider measures to secure asepsis. Given a serous or sero-mucous discharge from the meatus, no matter what its source may be, no further treatment is necessary to obtain a perfect cure than to prevent infection of this fluid as it lies in the external auditory canal. Frequent cleansing of its surface diminishes the chances of infection, but the danger is still further reduced if the cleansing fluid is antiseptic in character. It need scarcely be said that the syringe must be surgically clean, and that a separate receptacle should be used for receiving the washings, instead of allowing the return current to flow into the vessel containing the irrigating fluid. This absurd error often occurs unless it is guarded against by giving special directions.

The fluid to be used is largely a matter of choice. Personally the writer prefers an aqueous solution of bichloride of mercury, 1 to 3000 or 1 to 5000. The fluid should be warm, but not hot, and the comfort of the patient is the best guide to indicate the correct temperature. Many other antiseptic solutions are, no doubt, as good as the one mentioned. Peroxide of hydrogen in these cases is, however, objectionable, although it is highly recommended by many authorities. The mixing of a solution of peroxide of hydrogen with a purulent secretion is followed by the evolution of considerable gas. The mere ocular demonstration of the activity of this agent, by means of the bubbles of gas which are seen to rise to the surface of the fluid as soon as the injection is made, in no way establishes its germicidal properties. The sudden liberation of a large volume of gas in the middle ear, where drainage is imperfect, is not free from danger, and for this reason the agent is contraindicated in these cases. Another objection is the irrita-

tion of the canal which the protracted use of the substance causes.

After cleansing the canal in the manner described, it should be maintained in as aseptic a condition as possible until the next irrigation. For this purpose each irrigation is followed by the instillation of a few drops of a dilute alcoholic solution of the bichloride of mercury, of a strength of 1 to 3000, the following mixture being the one the author usually employs:

℞ Bichloride of mercury, 1 part;
Water, 1000 parts;
Alcohol, 2000 parts.

Under the use of these measures a serous or sero-mucous discharge will ordinarily cease, whether it be the result of aspergillus of the canal or of an acute catarrhal otitis media, either in a case in which the membrana tympani was intact before the acute attack, or when this structure has been partially destroyed by a previous purulent inflammation. In other words, prevent infection from without, and recovery is prompt.

If the medical attendant is familiar with the use of the head-mirror, it is, of course, wise to dry the ear carefully at least once daily by means of cotton pledgets, and to apply the alcoholic solution, above mentioned, to the walls of the canal and to the membrana tympani by means of the cotton-tipped applicator. If the membrana tympani is largely destroyed, the same application should be made to the internal tympanic wall. It is hardly necessary to say that, in making such applications, the surgeon's fingers should be carefully cleansed, and that all instruments introduced into the meatus must be in an aseptic condition. It should also be remembered that under no circumstances is the canal to be occluded with cotton: the pledget soon becomes saturated with the discharge, and infection of the contiguous walls of the canal easily occurs. Powders should not be introduced into the canal to check an otorrhea; when mixed with the secretion they form hard masses which may firmly occlude the channel and prevent free drainage. The same measures should be applied in cases of purulent otorrhea, and will prove efficient in the case of furuncles within the meatus, preventing repeated infection of the adjacent parts of the canal.

In acute purulent otitis media the treatment suggested is the most advantageous, unless the surgeon can determine the exact local condition by speculum examination. The drainage in these cases is often imperfect, and free incision is necessary in order to secure relief. Until this can be done, however, the systematic irrigation of the canal, and measures for maintaining an aseptic condition of the region, are of the greatest value.

In chronic purulent otitis the same measures should also be employed. In these cases, however, drainage is often imperfect, from the retention of secretion in the middle ear by the remnants of the membrana tympani or by the various reduplications of the mucous membrane lining the tympanic cavity. Here, also, free incision is necessary to secure a perfect drainage.

Again, the products of suppuration may be confined by the development of granulation tissue within the middle ear. In order to perfectly drain the cavity, this tissue must be removed either by means of the sharp curette or by the cold-wire snare. If the inflammatory process has exhausted itself, free drainage and asepsis will effect a cure. If, however, the process is still active, or if all necrotic tissue has not been evacuated, the discharge may continue, and the suggestions regarding treatment already given will merely reduce it in quantity. The author refers particularly to cases in which the bony structures within the tympanum are carious; this process may involve the ossicular chain alone, or may extend to the bony walls of the tympanum as well.

It is to be remembered that there is no such thing as "special surgery." The same broad principles which apply to caries and necrosis in other parts of the body are equally applicable to a similar condition within the middle ear. Every vestige of diseased bone must be removed before relief can be obtained. The exact procedure to be adopted must vary with the local conditions presented by individual cases. Where the caries is limited to the ossicles, and to those portions of the tympanum which can be easily reached by instruments introduced through the meatus, excision of the remnant of the ossicular chain and thorough curettement of the tympanic cavity will afford relief. Where, however, the process has extended further, and has invaded the most remote parts of the tympanic vault, and even the mastoid process, an intratympanic operation will not give relief, and some modification of the more radical procedure advised by Stacke (*Archiv. für Ohrenheilk.*, xxxi, p. 201) will be necessary.

The Stacke operation consists in detaching the auricle and fibrous meatus from the bony

structures, and drawing the soft tissues forward, so as to expose the margins of the bony canal. The mastoid antrum is then entered in the usual way, and the partition between the canal and the opening in the mastoid is broken down, and the superior wall of the bony meatus removed by means of the chisel, thus giving free access to the tympanic vault and mastoid cells. Every vestige of diseased bone is taken away, the parts being under direct ocular inspection. The posterior wall of the fibrous canal is split longitudinally, and the flaps thus formed are turned backward into the bony cavity, thus converting the external auditory meatus, the tympanum, the tympanic vault and the mastoid cells into one large cavity. The auricle is then replaced, and the incision behind the ear sutured. All parts of this space can be seen by speculum examination through the canal, and, if all diseased bone has been removed, a satisfactory result can be confidently expected.

Which operation should be selected in any individual case depends, as before stated, upon the extent of the lesion. If properly selected, the simpler operation of removal of the ossicles and curettement of the tympanum gives results which are equally as satisfactory as those obtained by the more radical operation.

ANTIPYRIN IN THE TREATMENT OF WHOOPING-COUGH.

In the *Gazette Hebdomadaire de Médecine et de Chirurgie* of October 22, M. LeGoff calls attention to the results obtained by many authors with this treatment. Dubousquet-Laborderie employed it in 300 cases, 196 of which were cured or benefited. The average duration of the treatment was thirty-five days. The amounts given daily varied from five to fifteen grains for children up to three years of age, and from thirty to sixty grains for older children and adults. The same results were observed by Geffrier, De la Jarrige, Jasiewicz, and others. Richardière has also employed antipyrin with satisfactory results; it diminished the number of coughing attacks one-third in the majority of cases, although it never suppressed them completely; in two cases in which the patients vomited profusely it had no effect on the vomiting; he concluded, however, that antipyrin exerted a positive action, but that it was not superior to belladonna.

Whenever the renal functions are not impaired, says the author, M. Lemoine prefers this medication to any other, as its action is surer and more rapid. To small children he gives from four to eight grains in enemata every twenty-four hours, and to children from three to six years of age and older, twenty-four grains in six doses.

Von Genser enumerated the results obtained by him in 200 cases, in which he employed two methods of treatment: Insufflations of powdered medicaments into the nasal fossæ, and antipyrin administered by the stomach. With the first method few results were obtained, and the duration of the treatment was at least forty-three days; in the second the results were more conclusive. Administered in quantities of two grains a day for each year of the child's age, antipyrin always diminished the number of coughing attacks and lessened their violence. Recovery was obtained in twenty-four days, and from this the author concluded that antipyrin shortened the duration of the disease. Many other instances are cited by M. LeGoff to demonstrate the efficacy of this treatment.

In regard to its mode of action, he says the drug is essentially a nervine, and acts as an analgesic and antispasmodic. By diminishing the irritability of the superior laryngeal nerve which, by reflex, produces the cough, it arrests the attacks of coughing and prevents serious symptoms which the intensity of the attack may cause. This action on the nervous element of the cough is the least disputed of the effects of antipyrin in whooping-cough, and was observed by M. LeGoff himself in eighteen patients, in seventeen of whom the number of attacks and their intensity diminished considerably, and in nine recovery occurred in less than twenty-five days, thus cutting short the duration of the disease very much.

In the second place, antipyrin is an antiseptic. Brouardel and Loye have shown that it is antizymotic. A five-per-cent. solution hinders the development of microbes and attenuates their virulence; its action has been manifested as well in laboratory experiments.

Concerning its action on the catarrhal element of this disease, says the author, Mouvet affirmed that if it was given in the first stage of the affection it arrested the catarrh; Soula also observed similar results. M. LeGoff himself administered antipyrin to a patient during the first stage of the disease, and not only the attacks of coughing, but the catarrh, disappeared in seven days. In his other

patients he remarked that the catarrh disappeared under the influence of this treatment more rapidly than is ordinarily the case after the cessation of the attack, and on this point he is corroborated by other observers.

M. LeGoff states that the only symptom he has observed to follow the use of antipyrin is albuminuria, which appeared in two cases; it disappeared rapidly, however, after the cessation of the use of the drug and the establishment of a milk diet. Many physiological experiments, he says, and the majority of clinical observations, demonstrate that antipyrin is eliminated well in animals and in persons with healthy kidneys; children, particularly, eliminate it easily. Cordes, Taylor, Dubousquet-Laborderie and others cite instances to show that antipyrin causes nausea, vomiting, with epigastric pains, and anorexia. It is not known, says M. LeGoff, whether these symptoms are to be imputed to any impurities in the drug, to an excess of action, or to peculiar individual susceptibilities. M. Dubousquet-Laborderie thinks the former play a certain part in giving rise to the symptoms observed. However, says M. LeGoff, the benignity of these symptoms is sufficiently assured, and we need not fear to give antipyrin even in large doses. It is prudent, however, to watch the elimination carefully, and, before giving the drug, to ascertain the condition of the renal filter.

In order to prevent any injurious action on the digestive tract, the drug is given in Vichy water as follows:

℞ Antipyrin, 15 grains;
Gooseberry syrup, 300 grains;
Vichy water, 2½ ounces.
M.

This quantity is to be taken in twenty-four hours, a dessertspoonful after each coughing attack. Besides this, M. LeGoff recommends the ingestion of milk or bouillon after each dose of the solution, as the antipyrin is thus very well tolerated.—*New York Medical Journal*, Nov. 14, 1896.

TREATMENT OF PERNICIOUS ANEMIA.

Our notions concerning the nature of pernicious anemia have undergone various modifications since it was recognized by Addison in 1855 and by him designated idiopathic, and its subsequent description by Biermer, in 1868, as an independent affection. A final decision cannot yet be given as to whether the disorder is dependent principally upon excessive destruction or upon deficient blood-production, but the statement can be safely made that the affection is no longer looked upon as primary or idiopathic, and doubt may exist in some cases as to its progressive and pernicious character in the sense in which it has been customary to employ these terms.

A growing experience has taught that profound and fatal anemia may result from a variety of causes, sometimes perfectly obvious, but at other times so obscure as to escape detection at the hands of the keenest clinical observer. Sufficient evidence has accumulated to justify the conclusion that in a not inconsiderable proportion of cases the blood depravity results through the gastro-intestinal tract, perhaps in consequence of poisonous products there generated, or by infection, or from the presence of parasites of other character.

These advances in our knowledge of the etiology of the disease have not been without their influence upon a selection of the means employed in its treatment. Thus, whenever a source of hemorrhage or other wasting discharge can be discovered, the first essential step is to secure its control. When animal parasites are found to be present in the intestinal tract, their extrusion must be effected by appropriate means. When it is suspected that the condition arises in consequence of intoxication, resulting from some failure in the normal digestive and assimilative processes, measures calculated to aid gastro-intestinal digestion and disinfection will be indicated; if the intoxication be dependent upon the retention of metabolic products intended for excretion, laxatives—and especially calomel and salines—may be used with advantage.

Upon the assumption that the excessive hemolysis in pernicious anemia takes place as a result of the presence of toxic matters in the gastro-intestinal tract, Gibson was led to prescribe two-grain pills of beta-naphthol, two or three daily, in the treatment of a case of that disorder, with the happiest results.

Acting upon the same thought and adopting a suggestion of Fraser, Dieballa employed salol successfully in a similar case, in which the usual remedial agents had been employed without avail. The patient was a laborer, fifty years old, who suffered greatly from weakness, and presented a yellowish discoloration of the skin and conjunctivæ, and pallor of the lips and mucous membranes, with a reduction of the red blood-corpuscles to 1,120,000 per cubic millimeter, of the white to 2600, and of the hemoglobin to 43 per

cent. At the age of thirty-one he had had a like attack, from which he recovered in the course of six months, and again another at the age of forty-five. The red blood-corpuscles varied greatly in size and shape, and some were nucleated. Of the colorless corpuscles, 55 per cent. were polymorphous neutrophiles, 21 per cent. lymphocytes, 13 per cent. large mononuclear cells, 8.5 per cent. transitional forms, and 2.5 per cent. eosinophile cells. After arsenic, bone-marrow, iron, inhalations of oxygen, and quinine, singly and in combination, had been employed for more than four months without appreciable benefit, salol was given in doses of fifteen grains five times a day. Unpleasant symptoms arising, the frequency of administration was reduced to three times a day. The treatment was continued thus for three months, at the end of which time the red corpuscles had increased in number to 4,200,000 per cubic millimeter, the colorless corpuscles to 7000, and the hemoglobin to 60 per cent., while a gain in weight of thirty pounds had been made. Of the colorless corpuscles, the polymorphous neutrophiles were increased to 68 per cent., and the large mononuclear and transitional forms to 8 per cent., the others undergoing practically no change. The presence of eosinophile cells in about normal proportion was looked upon as indicative of maintained functional activity of the bone-marrow in the process of hemogenesis, and to this extent of favorable prognostic omen.

In cases in which the blood-forming organs are believed to be at fault, bone-marrow may serve a useful purpose. The influence which this substance is capable of exerting is still undecided, but in a disease like pernicious anemia, in which no measure can be expected to act with certainty for good, the patient should be given the advantage of every doubt, and no remedy should be neglected which may even doubtfully render a service. In the way of agents that aid in blood-making, the first place must be given to arsenic, given in doses as large as the patient will bear and for a long period of time. Iron is not capable of the same good, but may find a useful place in the treatment. Inhalations of oxygen have at times proved a valuable therapeutic adjunct.

It goes without saying that the diet should always be the most nutritious possible, special care being observed to maintain digestive integrity; while no general hygienic precaution should be neglected. Moderate and gentle exercise in the open air, within the limits of fatigue, and exposure to sunshine, should be judiciously indulged in. Symptomatic indications must be met as they arise. Strychnine in moderate doses will almost always serve a useful purpose.

In attempting to reach a decision as to the efficacy of any plan pursued in the treatment of pernicious anemia, it is to be borne in mind that periods of transitory improvement, of varying duration, are often a part of the natural course of the disease, so that too much importance must not be attached to the favorable results that may follow the special line of medication employed. Even if such improvement continue for a long time, the conclusion must not be too hastily reached that the disease is cured.—Editorial, *Medical Record*, Nov. 14, 1896.

TREATMENT OF DIABETES.

At the recent French Congress of Internal Medicine (*La Sem. Méd.*, August 19) Mousse of Toulouse said he had tried antipyrin with the object of diminishing the amount of sugar, uric acid, and urea, but the diminution had only been fleeting. He had come to the conclusion that antipyrin should not be prescribed for diabetes. Beer yeast was of no use in his hands. He has tried pancreas in the fresh state in daily doses of thirty grammes, but with no better success. In his opinion the cornerstone of treatment in diabetes is diet; if drugs are used, their effect should be closely watched, as they are not infrequently hurtful.

In discussing the communication, Spillmann said he had treated two cases of wasting diabetes with injections of pancreatic juice. Each time the injections were given the sugar diminished and the weight remained stationary.

Mousse admitted that each time he had given pancreas it had seemed to him that loss of weight was retarded.—*British Medical Journal*, Sept. 26, 1896.

CREOSOTE AND COD-LIVER OIL IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

Chtanguee, in a communication to the Medical Society of Yalta during the Sixth Congress of Russian Physicians, made the following statements:

Both creosote and guaiacol are to be considered as symptomatic remedies, exercising a powerful influence in tuberculosis, not only

when it is pulmonary, but when it involves other portions of the body. It is, however, in pulmonary tuberculosis of the chronic type that they give their most signal results, being of comparatively little value in acute pulmonary tuberculosis or "galloping consumption." The tuberculous process when in the caseous condition is particularly favorable to the use of the drug, but, on the other hand, the remedy is comparatively useless in cases where the process has advanced and cavities are forming. Over tubercular laryngitis, creosote and guaiacol have very little influence, and they should never be prescribed in cases of tubercular enteritis. Should any dyspeptic symptoms arise, these drugs must be discontinued, and Chtanguee asserts that hemoptysis is a contraindication to their use. Further, he asserts that creosote and guaiacol exert no influence upon the number of tubercles contained in the sputum. Neither do they possess much influence as prophylactics. He recommends the carbonate salts of creosote and guaiacol, since they have not the disagreeable odor and taste of the more crude preparations; the dose he suggests is from thirty to sixty minims a day. Quoting the reports of those who are most enthusiastic as to the value of creosote in tuberculosis, he calls attention to the results of Notznikof and Bouchard, who claim forty-seven per cent. of cures or marked ameliorations from its employment.

In regard to cod-liver oil, he believes that its administration to cases not far advanced nearly always results in a marked gain in weight when it is given in the dose of two to five drachms a day. He believes it also exercises an antipyretic, as well as a resolvent and alterative, influence, modifying the tubercular lesion. Hot weather, however, contraindicates the employment of cod-liver oil, and it is sometimes difficult under these circumstances to keep a bottle which has been opened in fresh condition. It goes without saying that the oil has no beneficial influence so far as hemoptysis is concerned.—*La Médecine Moderne.*

THE USE OF HOT-AIR BATHS IN ALBUMINURIA.

In *La France Médicale* of September 4, 1896, CARRIEU calls attention once more to a very old method of treating albuminuria by hot-air baths. He does this because, considering its value, this method is too much ignored. The profuse sweating which the hot-air bath produces relieves the body of many albuminoids, and thereby is of value to the kidney. During the administration of the bath the patient's head should be in air of ordinary temperature, and plenty of air should be given to him to breathe. The bath should last about twenty minutes, and be repeated every four days or oftener. There is usually, under the bath, a quickening of the pulse and a temperature elevation of one or two degrees. As a rule, however, the respiration is not embarrassed if the patient is given a large amount of air. The disagreeable symptoms which at times come on during earlier treatments—palpitation of the heart, headache, slight elevation of temperature, and perspiration—continue usually for an hour after the bath.

The therapeutic effects directly gained are, first, a slight and temporary diminution of the urine on the day of the bath, followed by a distinct increase in urinary secretion afterwards. The density is decreased. The albumen is also decreased in cases of both subacute and chronic nephritis, but baths are contraindicated where the kidney disease is associated with arterio-sclerosis or nervous or cutaneous lesions.

Carrieu bases his opinion upon the use of this treatment in seven cases.

THE TREATMENT OF BURNS IN CHILDREN.

The ordinary treatment of burns, both in adults and children, has been by Carron oil or lime-water and olive oil. In the *Journal de Médecine de Paris* of September 6, 1896, the following treatment is recommended: For superficial burns of the first degree, first a lotion of warm water which has been sterilized by boiling, then application of compresses of tarletan folded five or six times and soaked in a solution made up as follows:

℞ Boric acid, 3 drachms;
Antipyrin, 1½ drachms;
Sterilized water, 8 ounces.

Or the following ointment may be used:

℞ Boric acid, 45 grains;
Antipyrin, 15 to 30 grains;
Vaselin, 1 ounce.

If burns of the second degree the same treatment may be used, but before it is applied the blisters should be drained by nicking them. For burns of the second degree with deeper lesions of the cuticle the part burned should be submerged in a basin containing warm water which has been sterilized by

boiling, and the temperature of this water should be gradually increased as the patient is able to stand it. An antiseptic toilet of the part with water and soap then follows, and after this it is bathed with carbolized water of two-per-cent. strength. For the relief of pain, it is well after this to wrap up the part with a compress of tarletan soaked in a mixture as follows:

℞ Saturated solution of boric acid, 1 pint;
Wine of opium, 1 to 2 drachms.

Or the following ointment may be used:

℞ Iodoform, 15 grains;
Antipyrin,
Boric acid, of each, 75 grains;
Vaselin, 2 ounces.

Should a large part of the body be burned, the child may be dipped in a bath prepared in the way just named, and during the antiseptic toilet of the burned parts general anesthesia may be produced by the use of chloroform. After this the parts should be dressed with the ointment just mentioned.

Where the burns are very severe, the part may be dressed with iodoform gauze or iodoform ointment; and if the suppuration has been severe enough to result in sloughing of the part after it has been antiseptically treated in the manner already described, it should be dressed with iodoform, charcoal, and cinchona bark, of each two ounces. It may be necessary to perform amputation after the period of shock has passed by.

THE SUBCUTANEOUS INJECTION OF SULPHURIC ETHER IN THE TREATMENT OF HEPATIC COLIC.

We are told by the *Journal de Médecine de Paris* of September 6, 1896, that KUMS of Antwerp has obtained excellent results from this treatment. The injections were made in the hepatic region, one at noon and the other at night, and were repeated until relief followed. Under this influence the pain decreased, the urine took on its normal color, and after a period of two months the patient was still entirely free from attacks. In another instance, in which the attacks had been unusually severe, the injections of ether repeated morning and night over a period of two days caused a rapid disappearance of the pain and of the characteristic icteroid urine.

In some instances Hoffmann's anodyne may be employed in place of ether itself. Indeed, Kums prefers it to the pure ether, as he thinks its effects are much better.

THE TREATMENT OF TUBERCULOSIS BY THE SALTS OF THE BLOOD.

STADELMANN has suggested that in a certain number of cases of tuberculosis there is a decrease in the normal saline constituents of the body, and he therefore suggests that it will be of advantage to give to patients suffering from this disease an increased quantity of saline material. Thus, he recommends that the phosphate of sodium shall be given in the dose of thirty grains three times a day, and that subcutaneous injections of six to seven grains of chloride of sodium be used. He asserts that after the treatment there is decrease in expectoration and the objective signs of disease. This treatment is in line with that of several authors, of employing artificial serum or saline fluid in the treatment of other infectious processes.—*Bulletin Générale de Thérapeutique*, Oct. 23, 1896.

A DISCUSSION OF THE TREATMENT OF MENTAL AND NERVOUS DISEASES BY ANIMAL EXTRACTS.

The *British Medical Journal* of September 26, 1896, contains a discussion, opened by ALEXANDER ROBERTSON, on this topic.

Before considering the group of therapeutic agents which is the subject of his paper, the writer names other special methods of treatment which he has used in his practice:

1. Heat and cold to the head at graduated temperatures. In some cases of insanity, recovery was at least largely due to this mode of treatment.

2. Mechanical stimulation of the brain and membranes by percussion of the skull. This has conduced to the recovery of some patients.

3. Electrization of the brain through the medulla. One electrode, passed along the floor of the nostril, rests on the cervical spine; the other is moved slowly over the convexity of the head. He has not yet used this procedure in the insane, but is now recording a case of diabetes insipidus cured under it.

4. Psychical—combined emotion and suggestion. The rapid recovery of a patient after mental shock, under this form of treatment, is referred to.

5. Hypnotism. Its power over the nervous system is illustrated by the immediate and confirmed recovery of a patient recently in the Royal Infirmary suffering from hemianesthesia, after other treatment had failed.

Observations have been made on the effects

of the following preparations: The fresh brain of the sheep; cerebrinin, an extract of the cortex; thyroid extract; Brown-Séquard testicular liquid; the thymus gland.

Myelin, or fresh sheep's brain, was given to seventeen patients. Six of them suffered from various forms of melancholia; three from chronic mania; two from paranoia; one from moderate dementia; five from organic diseases of the spinal cord. The most marked result was in the case of primary dementia.

The patient was a stout man, about forty, and was under treatment in the Royal Infirmary. His memory and intelligence were both greatly impaired, and there was some thickness of speech. He also had palsy of both legs and weakness of both arms. After five weeks of ordinary treatment he was not better, but rather worse. Three days after the myelin was begun, there was marked improvement both in mind and body. In five days he could not only stand, but walk a few steps; in nine days he walked up and down the ward; and in less than six weeks after the myelin was begun he left the hospital to resume his employment. Though nearly well, his recovery could not be said to be perfect.

Another patient, suffering from resistive melancholia of three years' standing, and who had not spoken or done any work for a year, within a week after the myelin was begun was knitting and speaking a few words occasionally. This was in January, 1893; since then she has been more or less maniacal. The author considers her incurable.

In a third patient, aged sixty, profoundly melancholic, there was recovery, and it is probable that myelin was very helpful in causing it; but this was not clear, as a little improvement was noticeable before the myelin was begun.

In a case of chronic myelitis the patient's power of walking was markedly improved for some weeks; but this change for the better was not maintained, and he gradually relapsed into his previous condition.

No distinct alteration, either for the better or the worse, was observable in any of the other patients. There was no change in their physical condition when taking the medicine, if we may so call it. Mixed with glycerin, flavored and colored with cinnamon and cochineal, it was not unpleasant to the taste. In one or two patients the larger dose of two teaspoonfuls caused sickness, but one teaspoonful was easily borne by the stomach in all cases.

Cerebrinin—practically the same agent as the last, but in a concentrated form—has been used in five cases of mental disease, two of chronic mania, and three of melancholia. The dose was generally thirty grains daily, in one case sixty. Two of the melancholic patients have distinctly improved; one is unchanged. The maniacal cases became more excited, but in one there is now greater lucidity.

Dr. Auld, a well known pathologist, now of London, in reply to the writer's inquiries, was good enough to state his impressions of the action of myelin and cerebrinin. He began a second time the use of myelin on hearing of the results of his earlier experience with it, and after some months had recourse to cerebrinin on its introduction. In his letter of June 8 last he says: "I do not know what I should exactly ascribe to the substance, but I have had two or three patients who said they were better for it; and in one case, on the medicine being stopped, the patient persisted in returning to it, and invariably declared it did much good, and still goes on with it. This patient suffered from agoraphobia, or dread of the streets and public places. Since taking the cerebrinin this has gone away. There was no organic disease in any case I had."

Thyroid extract in tablet form was given to five patients—three, dementia of years' standing; one, chronic mania. There was no mental improvement in any of them except the melancholic, but she soon relapsed. All lost weight, from 9½ to 11½ pounds, except one, a case of chronic mania, who gained 1 pound.

Brown-Séquard's testicular liquid was used in two cases, women about fifty, the one suffering from stuporous melancholia, the other from paranoia but moderately intelligent. Both were of years' standing. The contents of five tubes were introduced into the system on successive days by subcutaneous injection in one patient; seven in the other. There was no mental change whatever, nor was there any constitutional disturbance or more than trifling local effect. Apparently, the author states, he might as well have injected so much water.

Thymus-gland tablets were not used in mental disease. In cases where they were used the reduction in hemoglobin was marked—forty per cent.—and the increase of urea from three to five and one-half grains per ounce of urine in the course of seventeen days, three to six tablets daily. The patient, a boy aged

fourteen, suffered from lymphadenoma in a moderate degree. The morbid condition did not improve.

The statement by Robertson in an article published in 1893, in which he recorded his experience with myelin to that date, fairly expresses the opinion he now holds respecting the therapeutic value of these agents. It is as follows: "The impression remains on my mind that there is a constituent in the brain of the sheep, and doubtless also of other animals, which acts as a stimulus to nerve tissue—cell and fibre—in the human subject in certain morbid states of these structures." Dr. Auld's conclusion is much the same. He says: "I feel fairly confident that there is something in it, but won't commit myself more on the evidence I have. It probably, however, gives some tone to the nervous substance of the brain and cord."

Both agents have the great advantage that they do not weaken the system or seriously disturb the general health, and in using them the patients do not have to remain in bed. As many as four tablets have been given thrice daily. They will probably be found especially useful in the slighter or developing forms of mental disease and general neurasthenia. The more convenient form of tablet will probably supersede the fresh brain, as first used by the author.

His limited experience with thyroid extract does not warrant him in recording more than his general impressions regarding it. The active principle of the gland, probably akin in its nature to iodine, is clearly a powerful agent, and, apart from its special property in such conditions as myxedema and cretinism, increases greatly the metabolic changes of the body generally. This is shown by the rapid tissue-waste that usually, though not invariably, follows its use. It is evidently well fitted to disturb the existing status in insanity, and this is of the highest importance in certain forms and stages. It will probably prove useless in chronic cases where important structural alterations exist in the cerebral cortex, but it is not always easy to tell when this has happened. Its sphere of beneficial action will most likely be cases no longer quite recent, where the pathological changes in cell and fibre are not great, but might become permanent if they continued much longer. Encouraging results have already been recorded by a number of physicians. He names only Bruce and Macphail in England, Clark and Babcock in America; their experience suggests that it should be used more especially in cases that threaten to become permanent, and, of these, in general mania or melancholia, stuporous states, puerperal and climacteric forms.

As no appreciable result of any kind followed the injection of Brown-Séquard's orchitic fluid, nothing is suggested, unless it be that it is much less active than has been alleged.

Robertson closes with the remark that in these agents, especially the thyroid and cerebral extracts, and the other special methods of treatment referred to at the outset of this paper, we have additional remedial measures, and it seems the duty of the physician in charge of the insane to have recourse to them in suitable cases. By their use, there is good reason to think, we may reduce the amount of incurable insanity.

PUERPERAL FEVER: ITS PROPHYLAXIS AND TREATMENT.

The *Journal of the American Medical Association* of August 1, 1896, contains an article on this topic by MONTGOMERY, of Philadelphia, who holds that the first and most important consideration in treatment is prophylaxis. With a correct knowledge of the source of danger, we are the better prepared to meet or avoid it. As the contagion in the majority of cases is conveyed by contact, scrupulous aseptic or antiseptic precautions should be preserved. The nearer the measures of the careful surgeon can be imitated and practiced, the less will be the danger to the patient. The physician in general practice who is in attendance upon sepsis or erysipelas cannot be too rigid in his measures of preparation; indeed, it is a serious question whether he should go from a patient, who is virulently infected with sepsis or erysipelas, to the lying-in chamber. During the writer's term as resident physician in the Philadelphia Hospital in 1875, he went from the surgical ward, where he was in attendance upon cases of erysipelas, to the obstetric department; no special precaution outside of cleanliness of hand and person was practiced. An epidemic of puerperal sepsis developed, in which twenty patients became seriously sick and four lost their lives.

The measures particularly to be practiced are: removal of the coat; baring of the arms to the elbows; careful washing of the hands with soap and hot water, with diligent use of the nail-brush; immersion of the hands in 1-to-

500 bichloride solution, and subsequently in alcohol. The bedding and personal clothing of the patient should be clean, the vulva should be washed with soap and hot water, the bowel emptied by an enema, and an antiseptic douche given. Digital vaginal exploration should be infrequent and only after careful disinfection of the hands. Instruments should be sterilized by boiling. Long-continued manipulation, instrumental delivery of the placenta, should be followed by antiseptic intra-uterine irrigation.

The parts should be carefully cleansed subsequent to delivery, and the uterus left firm and well contracted. Lacerations of the vagina and vulva, unless the tissues are bruised or the vitality destroyed by long-continued instrumental delivery, should be at once sutured; excoriations may be cauterized by carbolic acid. The vulva should be covered with an antiseptic pad, which should be changed as frequently as it becomes soiled. With each changing the vulva should be cleansed with an antiseptic solution. Aside from the immediate post-partum irrigation mentioned, intra-uterine or vaginal douching should not be practiced.

But physicians will reply that they have attended large numbers of confinement cases without such precautions, and no bad results have followed. This may be true. With ordinary precautions the chances are favorable, and much depends upon the condition of the patient. Not every patient, fortunately, to whom contagion is conveyed, yields to its influence. The normal secretions of the vagina are unfavorable for germ-culture. The tract is irrigated by discharge of the liquor amnii and swept clear by the passage of the fetus. Many eminent obstetricians, among whom may be named Lusk, are content to depend upon these conditions in ordinary cases; still, the preliminary douching does not seem useless.

Treatment of infection may be considered as, first, maintenance of the powers of resistance; second, production of immunity; and third, resort to surgical procedures for relief of local manifestations. This classification of treatment has reference to septic conditions. Sapremia or putrid intoxication is relieved by removal of the decomposing placenta, portion of membrane, or blood-clot, and subsequent irrigation and drainage.

The diagnosis is determined by the character of the lochia and the digital exploration of the uterine cavity. Decreased or absent lochia, elevation of temperature, rapid pulse, depressed and anxious countenance, should awaken suspicion of beginning sepsis, whether accompanied or not by local tenderness. A smooth intra-uterine surface confirms the diagnosis.

The rapidity with which the vital forces are depressed contraindicates the use of depleting agents, unless it be the moderate use of purgatives to aid in elimination. Early resort should be made to tonics, stimulants, and easily assimilated and nourishing food. The most efficient stimulant will be found in strychnine, which should be given for effect, and may be administered hypodermically in doses of one-fifteenth of a grain every two or three hours where there is much depression. Opium, morphine and antipyretics should be given with great circumspection. For the control of temperature, cold sponging or the cold pack should be practiced. Pain, whenever possible, should be relieved by the ice-bag.

The natural tendency of disease germs is to develop toxins which are toxic to themselves and render the individual immune to further ravages. The better the nutrition, the more the strength is sustained, the earlier immunity will be secured. In many cases, however, the progress of infection is so rapid, the intoxication so profound, that the patient cannot survive until immunity has become established. As we cannot foretell in any individual the virulence of the infection, nor the possible powers of resistance, the use of antitoxin should be considered as indicated wherever infection is recognized. This is best given by hypodermic injection. These injections of streptococcus antitoxin should be given in doses of twenty-five cubic centimeters once daily for four days. They may be made into the cellular tissue of the abdominal wall, or into the buttocks or thighs. Of course every precaution must be practiced to render their use aseptic.

THE TREATMENT OF CORYZA.

In the *Journal des Praticiens* of October 17, 1896, we are told that LEMOYEZ treats coryza in the following manner: The abortive treatment, which must be introduced within the first twelve hours, may, if carelessly employed, produce a certain degree of irritation and in that manner increase the severity of the attack. In this early stage ten drops of the following mixture should be placed upon a sheet of rolled bibulous paper and the vapors be inhaled in much the same way that a cigarette is smoked. The formula is:

℞ Pure carbolic acid,
Pure aqua ammonia, of each, 75 minims;
90-per-cent. alcohol, 2½ drachms;
Distilled water, 4 drachms.

In most cases, however, the following powder for abortive purposes is better. It must be very finely pulverized:

℞ Hydrochlorate of cocaine, 7 grains;
Menthol, 4 grains;
Salol, 75 grains;
Boric acid, ½ ounce.

A small pinch should be drawn up into the nose every hour.

Should the attack be severe, so that this abortive treatment is likely to fail, it is well to administer a purgative with the purpose of withdrawing congestion from the head, and to produce abundant perspiration by the use of hot alcoholic beverages, liquor ammonii acetatis, or Dover's powder in doses of five to ten grains. Should the permeability of the nasal cavities be obstructed, it may be well every two to five hours to use a spray, with an atomizer, of a hot solution of cocaine in the proportion of one per cent.; or the following powder, which is antiseptic, may be employed:

℞ Hydrochlorate of cocaine, 7 grains;
Menthol, 3½ grains;
Salicylated bismuth,
Sugar of milk, of each, 75 grains.

Should there be reason to fear cocaine intoxication, mentholated sweet oil may be used instead in an atomizer as follows:

℞ Menthol, 15 grains;
Olive oil, 5 drachms.

For the purpose of overcoming any trigeminal neuralgia, and also for the support of the system, a cachet such as follows may be given three times a day, after meals:

℞ Hydrochlorate of quinine, 4 grains;
Antipyrin, 7 grains.

For the purpose of preventing reddening and excoriation of the nares, they should be anointed with borated vaselin.

In regard to the prophylactic treatment of coryza in persons who are exceedingly susceptible to attacks, it is well to remember that any intemperance in relation to alcoholic beverages increases the susceptibility to coryza, and that chronic lesions in the nose should be removed, as they maintain a tendency toward acute inflammation. Particularly is this true of adenoid vegetations in children and hypertrophic rhinitis in adults.

THE TREATMENT OF DIPHTHERIA WITH THE ANTITOXIN.

Additional testimony is constantly accumulating to establish beyond a doubt the utility of antitoxin in the treatment of diphtheria. A recent contribution can be found in the report made by FURTH (*Münch. Med. Woch.*, 1896, No. 29) of 150 cases thus treated at the medical and surgical clinics of the University of Freiburg. This report is supplementary to a previous report of 100 cases treated in the same way. Of the 150 cases, diphtheria bacilli were found in 123. In the remaining 27 the diagnosis was confirmed by subsequent tracheotomy; of these, besides, 13 terminated fatally, and were examined post-mortem. Twelve cases in which diphtheria bacilli were not found, were treated with the antitoxin, but they are not included in these statistics. In 34 of the 123 cases streptococci also were found, but the examinations were made twenty hours after inoculation—at a time thus unfavorable to the development of streptococci. In the case of five children with laryngeal diphtheria, of whom three required tracheotomy and two died, diphtheria bacilli were cultivated from the pharynx, although this was free from membrane, swelling, or redness. One of these children had measles also, so that the diagnosis was a matter of considerable significance. Of the 150 cases, 122 were uncomplicated and 28 complicated. The complications included measles (16), scarlatina (5), measles and scarlatina (2), measles and typhoid fever (1), and tuberculosis (4). Among the 122 uncomplicated cases there were 12 deaths (9.8 per cent.); tracheotomy was required in 26 cases (21.3 per cent.), with 9 deaths (34.6 per cent.). Among the complicated cases there were 11 deaths (39 per cent.); tracheotomy was required in 9 cases (32 per cent.), with 6 deaths (66.6 per cent.). Of the whole number of 150 cases, death occurred in 23 (15.3 per cent.).

Notwithstanding the coincidence of epidemics of measles and scarlet fever, the mortality was lower than in any previous year. The proportion of cases requiring tracheotomy was also smaller, and the mortality among these lower. Over and above the complications the disease itself was in many instances of unusual severity. While in former periods the mortality in early life had varied from sixty to one hundred per cent., in the present collection of cases there were only three deaths among nineteen children under two years of age, although eight of these

cases required tracheotomy. The dose of the antitoxin employed was larger than previously. Of the fatal cases, two were septic, without involvement of the larynx; both of these came under observation on the fourth day of the disease, and death took place in sixteen and sixty-eight hours, respectively. In six cases death resulted from descending croup; all required tracheotomy. In two cases death was due to diffuse broncho-pneumonia, after the local process had terminated. Finally, in two of the cases death resulted from paralysis of the heart on the sixth and forty-first days of observation, respectively.—Editorial, *Medical News*, Nov. 28, 1896.

HYDROCEPHALIC IDIOCY.

The well known neurologist of New York, Dr. PETERSON, writes upon this topic in *New York Medical Journal* of July 25, 1896. He believes that the treatment of chronic hydrocephalus of the simple, primary kind is medical or surgical. Bourneville sums up the medical treatment which he has found successful in some instances as follows: 1. Compression (Barnard, Trousseau). 2. Revulsives (Gelis). 3. Internal administration of calomel (Gelis).

The head of the child is shaved, and a capeline bandage applied for a week. After a week's rest this is renewed, or, if any incident contraindicates this, daily friction with mercurial ointment is substituted. At the same time calomel is administered twice weekly, in 1½-grain doses. Every month, for a year or more, a vesicatory is applied to the head for from fifteen to twenty hours, and, when it begins to dry, compression is again employed. In addition to this, exercise, massage of the limbs, salt baths, douches, tonics, etc., are used as required. Pedagogic treatment is important for this class of cases when cure or arrest of the disorder seems evident.

Thus far surgical procedure of any kind has not proved to be of particular value. Most patients have died as a result of operation. Possibly a more conservative method of operating may be devised in the future. Up to the present time the surgical procedures resorted to have been (1) craniectomy and drainage; (2) puncture of the lateral ventricles; (3) puncture of the fourth ventricle; (4) lumbar puncture.

Craniectomy with drainage may be excluded nowadays altogether from the category of expedients. The patient is almost certain to die as a result of the sudden evacuation of a large amount of fluid.

Puncture of the lateral ventricles, even if carried out carefully according to Keen's method (*Medical News*, December 1, 1888) promises but little more, and had best be abandoned as a remedial measure in this class of cases.

Trephining of the occipital bone, three-fourths of an inch below the superior curved line, to the right of the middle line, with subsequent enlargement of the opening downward, and the insertion of a probe into the fourth ventricle, is an operation which was proposed by Parkin (*London Lancet*, 1893) and carried out in four cases, two of which recovered. On theoretical grounds this form of procedure seems to have much in its favor, and to deserve more extensive trial. A similar measure, successfully tried, is trephining in the region of the temple and insertion of the cannula in the subarachnoid space of the fissure of Sylvius.

Lumbar puncture—by which is meant the insertion of a drainage needle through an intervertebral space in the lumbar portion of the spinal column into the spinal cavity—has been rather extensively employed of late in a great variety of affections of the central nervous system, hydrocephalus being among them. Jacoby (*New York Medical Journal*, Dec. 28, 1895, and Jan. 4, 1896) has recently made a careful study of the subject of lumbar puncture in connection with a number of central nervous maladies. Quincke seems to have been the originator of the method (Tenth International Congress, 1891), though Wynter (*London Lancet*, 1891) proposed it about the same time. It seems to be a simple and harmless procedure, as well as a powerful means of reducing intracranial pressure. An ordinary aspirating needle (one millimeter in diameter, eight centimeters long) is aseptically employed. The space between the third and fourth lumbar vertebræ is selected, five millimeters to the right of the median line, though in children the puncture may be made directly in the median line. An anesthetic is rarely required. The needle should be pushed in from two to eight centimeters. The fluid begins to flow out in drops or in a small stream, according to the degree of intracranial pressure. The amount of fluid allowed to flow out must be gauged by the indications and conditions; Fürbringer withdrew in one case 110 cubic centimeters at one time. On removing the needle, the puncture is closed with a little

iodoform collodion and a compress with adhesive plaster. Fürbringer, Huebner and Ewald report temporary improvement in hydrocephalus after lumbar puncture, but the method is as yet too novel and has been too little used to allow of any definite conclusions as to its value in this class of cases. Several cases of recovery from hydrocephalus by means of this measure have been reported.

Operation does not preclude the employment of other means. Horizontal bandaging of the head with a wide rubber bandage after tapping, and the use of cod-liver oil and phosphorus, are certainly of considerable service and should not be neglected.

THE MEDICAL TREATMENT OF TIC DOULOUREUX IN CONNECTION WITH THE QUESTION OF OPERATION.

In an article with this title in the *British Medical Journal* of November 21, 1896, EWART states that the medicines he has employed with some success in the present cases are not claimed to be specifics nor to be suitable to all. Greater importance belongs to the method, which is based on the assumption of a constitutional factor, and on the clinical contrast between tic and the ordinary neuralgia. A merely symptomatic and sedative treatment, such as may benefit ordinary neuralgia, is powerless and only too likely to perpetuate the ailment. While ordinary neuralgia, although seldom overcome by sedatives alone, is benefited by alcohol, by iron, by strong tonics, and by a generous diet, these are precisely the agents which often aggravate tic douloureux, as though in this neuralgia the nerve reacted to some irritant quality of the juices—such, for instance, as we may assume to exist in the gouty state—rather than to their deficiency in nutritive value. The constitutional element in treatment, namely, diet and hygiene, is for this reason an indispensable adjunct to medication. In the treatment of the cases narrated, special regard was directed to the indications for sedatives, restoratives, alteratives, and tonics respectively.

Sleep being the first essential, and the basis of the entire treatment, it is necessary that the narcotic prescribed should be sufficiently strong to procure prolonged slumber. Chloral and morphine combined will usually prove effectual.

The restorative measures include mental and bodily rest and suitable alimentation. Rest in bed is indicated in all severe cases till remedies have taken effect; and the success of the treatment may largely depend upon this means of economizing nerve energy. Alimentation is the second essential, but needs to be adapted to the irritable state which prevails at this stage. The tenderness of the mouth, and its often unhealthy state, and the feeble and faulty digestion, call for careful selection and for a gradual progression in diet; and the question here arises as to the use of nitrogenous food and of alcohol. The object of the treatment is to raise the nutrition without overloading the blood with nitrogenous waste. Thus a modified vegetarianism, including a liberal supply of the vegetable foods and a moderate amount of the nitrogenous, is generally indicated. Vegetarianism itself deserves a full trial in the worst cases before resorting to operation, and is said to have been attended with most favorable results, though Dr. Gowers refers to the opposite experience in a case where the neuralgia began coincidentally with the adoption of the vegetarian plan. Vegetable food was liberally, but not exclusively, supplied in the cases reported by Ewart; in one case, however, the patient has been for the last two years a strict vegetarian, with the exception of eggs. Alcohol is to be avoided; sufferers are well aware that the relief it affords is purely temporary, and it is regarded by the writer as decidedly harmful in promoting a liability to the attacks. While this liability prevails it should be absolutely forbidden; subsequently total abstention is the safer course, and should be the rule in the gouty cases. Nevertheless, in enfeebled and underfed subjects, stout, or even port wine, may be allowed as a temporary help to nutrition.

Dyspepsia due to gastro-hepatic catarrh may have to be dealt with as a preliminary; and in a mild case of this kind the neuralgia may rapidly subside under treatment directed to the stomach. The state of the teeth, and of the gums also, calls for every attention, though, as regards the teeth, more than is needful has often been done before the patient comes under treatment. It is a well known characteristic of the sufferers that they ruthlessly sacrifice their sound teeth as well as those decayed, in the vain expectation of relief. But the mucous membrane may be less at fault than the chemistry of digestion and of its products; and more searching remedies, which may be broadly termed alterative, will be needed.

The alterative treatment may, in genuinely gouty cases, be specially directed to the gout,

with careful avoidance, however, of any depressing agents. In the generality of cases a modified treatment, favoring absorption as well as glandular activity (particularly that of the liver), will meet the gouty as well as the general indication. The salicylates, the benzoates, sulphur, chloride of ammonium, and taraxacum, are available, but none of them probably equals in efficacy the salts of iodine and of mercury, and particularly their combination in the proportion of twenty to thirty minims of the solution of the perchloride of mercury to six to ten grains or more of the iodide of potassium. The iodide may be tried alone, and should then be given in sufficient doses; its action seems to be promoted by the addition of tincture of iodine in doses of fifteen to thirty minims. The full measure of relief, however, was not obtained in the two cases where the drugs were administered in installments, until mercury was added to the iodides. Where the iodides alone had failed, this combination brought about a cessation of the pain. As a useful adjunct, guaiacum, a drug so highly recommended in gouty affections, was employed; flavored with syrup of orange, it formed a mixture more unsightly than unpalatable, but in private practice it is better administered separately. No anodyne was in any of the cases administered conjointly, the night draught having become unnecessary after the first two or three nights.

Reduction of vascular tension is a well known property of the drugs in question; but it is difficult to apportion the share taken in the result by this influence, and by the favorable action on glandular and general metabolism and on absorption respectively. The action of nitroglycerin, which has also been prescribed with benefit, is less doubtful, and it is not, as is that of aconite, open to the objection that it produces undesirable depression.

The tonic measures, as already indicated, are less dependent on drugs—though the vegetable tonics may be used with advantage—than on hygiene, and, above all, on muscular exercise, which has the advantage of diverting energy from the oversensitive nervous mechanisms while raising the general nutrition. Muscular work should be at first passive, and only gradually increased. Ordinary massage may be applied at an early date after the needful long sleep has been obtained, and should be gradually replaced by the "resistance movements," and in suitable cases by Swedish gymnastics. Salt baths may be combined with this treatment, which, by diverting the circulation to the skin and muscles, would tend to relieve the nervous system. Climatic treatment may also be resorted to.

The treatment which has been sketched is complicated in its details, but simple in its general principles. The action of drugs needs to be favored by every hygienic advantage, and, above all, by a removal from home influences, which act as exciting causes. Probably no health resorts can confer advantages comparable with those gained by the poor from a stay in the hospital, which fulfils almost all the hygienic indications.

THE TREATMENT OF ASCITES BY INJECTIONS OF OXYGEN INTO THE PERITONEUM.

At a recent meeting of the Lyons Société Nationale de Médecine, M. Teissier related the case of a woman who came under his care for ascites with generalized edema. He treated her according to M. Potain's method of abdominal puncture followed by injections of oxygen into the peritoneum. At the first puncture about fourteen pints were withdrawn, but no amelioration occurred, as the liquid collected again in six days. A second puncture was then made and followed by the injection of 1300 cubic centimeters of oxygen. The operation was very well borne, and did not provoke any pain or local reaction; there was also complete absence of fever during the following days. The abdominal circumference diminished from 128 to 102 centimeters, and the edema of the lower limbs disappeared very rapidly. The oxygen was easily absorbed by the peritoneum. For some days there was some gurgling, but this disappeared at the end of eight or ten days. At the time of writing, the abdomen still measured 102 centimeters and sonorousness existed everywhere, even in the iliac fossa when the patient lay on her side. She was able to get up every day and walk in the open air. These results were obtained in three weeks.

The patient entered the hospital suffering from alcoholic cirrhosis, and after her entrance the liver increased in size and cardiac symptoms presented themselves. The diagnosis, said M. Teissier, might be open to discussion, but that was of secondary interest only; he presented the case because he had seen the grave symptoms disappear in three weeks under the influence of an injection of

1300 cubic centimeters of oxygen into the peritoneum.—*New York Medical Journal*, Aug. 1, 1896.

A CASE OF MALARIAL HEMATURIA, WITH SUMMARY OF TREATMENT.

In the *Alabama Medical and Surgical Age* for August, 1896, GUICE sums up his treatment of this serious condition as follows:

1. To control pain, restlessness, or other distressing symptoms, give hypodermically about a quarter of a grain of morphine, and repeat *pro re nata*, observing always that narcotism be not induced. Atropine is added to the morphine when indicated by the condition of the patient. The opiate is also vastly beneficial as a stimulant and regulator of the vaso-motor system.

2. Epsom salts should be given (particularly in the early stage) in full doses about every four hours until about six copious evacuations are obtained. Subsequently the bowels should be moved daily by the use of smaller doses of the salts. The active purgative effect produced by the magnesium sulphate is rationally one of the most important adjuncts to the treatment. The vigorous osmosis thus set up in the alimentary canal constitutes a valuable factor in relieving the congestion of the kidneys by lowering the vascular tension, and thus assists in controlling the hemorrhage. And the same osmotic action of the salts relieves the hepatic engorgement; in fact, all the organs supplied by the portal system are thus relieved or largely benefited. The purgation also tends to relieve the nausea and vomiting and otherwise to assist in placing the alimentary system in condition to retain and assimilate both food and medicine.

3. The turpentine is given early in the attack in the dose of ten drops every three or four hours, and continued till the urine is clear and the patient beyond the period of danger. It is an axiom with those best acquainted with malarial hematuria, that the oil of turpentine is by far the best remedy for the renal hemorrhage. And, aside from its hemostatic action, turpentine is a reliable diuretic, and thus renders additional service in preventing the suppression of urine. It is also a valuable vaso-motor stimulant, and thus fills another important indication, especially in the graver types of the disease.

4. The tincture of chloride of iron and solution of arsenic are given in combination, and operate to improve the condition of the blood and tone up the failing vital forces. The arsenic also acts specifically to counteract and destroy the germ of malaria. Eight to ten drops of the iron and two to three of the arsenical preparation should be given every three to four hours, and continued until convalescence is fully established.

5. In malarial hematuria the patient cannot be considered free from disease or exempt from relapses even after he has reached the stage of advanced convalescence. In truth, he is then, in most cases, only restored to the condition of malarial cachexia, with such additional damage as may have resulted from the exacerbation which precipitated the hematuria. Unless the patient receive proper treatment at this stage, he will continue in a state of malarial cachexia or probably suffer a recurrent hematuria. In all cases, therefore, the patient should remain under the care of the medical attendant, avoid exposure and violent exercise, and have nourishing food and comfortable clothing; above all things he should continue, for not less than thirty days, such treatment as is best adapted to the cachetic condition. Guice has used with unfailing success, in such cases, a combination of iron, quinine, and arsenious acid. The formula given in the case reported is a good one. Should the patient be unable to take pills or capsules, the following combination will be found effective:

℞ Quininæ sulphat., ʒ j;
Tinct. ferri chlorid., f ʒ v;
Liq. acidi arseniosi, f ʒ iss;
Potass. chlorat., ʒ j;
Syr. zingib., q. s. ad f ℥ iv.

M. Sig.: Teaspoonful in water thrice daily, after meals.

The foregoing treatment will prove effective, for this stage, in almost all cases, if strictly carried out for a sufficient period. And it is only reasonable that time should be required to correct the structural lesions existing in the spleen, liver, kidneys, etc. The same is true of the profound anemia and other pathological changes in the blood which preceded and were intensified by the hematuric paroxysm. The treatment, then, should be pursued until the patient is restored to health, whether one month or twelve be required.

ON THE TREATMENT OF BIRTH-MARKS.

There is nothing desperate in the way of treatment that a person afflicted with a birthmark of the face will not try, and therefore the article by ALGER in the *Medical News* of

August 22, 1896, is worthy of note by the general practitioner. As Alger says, nævi have been treated by caustics and acids, by the actual cautery, by pressure, by ligature, and by vaccination. The nævus araneus is very easily destroyed: a very hot needle or a needle dipped in carbolic acid may be plunged into the central capillary, thus destroying the whole mark in a very few seconds. But this procedure is objectionable where larger growths are concerned. They require great fortitude on the part of the patient, or the use of an anesthetic, and give considerable pain afterwards, while the destruction of tissue cannot very well be controlled. This is a very serious drawback, for we depend for our results upon the substitution of a scar for the mark, and the lighter and thinner the scar the better the cosmetic effect. For these reasons, the methods outlined above should never be employed about the uncovered parts of the body. The use of freshly prepared ethylate of sodium has been very highly recommended in vascular nævi that are not too large and deeply situated. It is rather painful, but after one or two applications a thin crust forms, which falls off in a few days, leaving a fairly thin scar. But unless the solution be freshly and carefully prepared, it is in effect an aqueous solution of caustic soda.

All things considered, the use of electrolysis is by far the most satisfactory means of treatment; but in order to secure good results it is necessary to have a good idea of the physical and chemical properties of the current. The appliances necessary consist of a galvanic battery of at least ten cells, or some means of regulating the street current, conducting cords, sponge electrodes, needle-holder, needles, etc. A milliampère meter is not necessary, but it is an assistance to good work. The cells should be connected zinc to carbon. The needle-holder is better without the spring for breaking the current which is generally provided. The needle may be varied in size according to the character of the work, from that of the very finest jeweler's needles to the broad flat surgical ones.

The sponge or punk electrode attached to the positive pole, thoroughly moistened with saline solution, can be continuously applied to the skin, the current being regulated through a rheostat; but the best way is to have the patient hold the sponge and complete the circuit by pressing it against some convenient part of his body. It is less painful to break the current at the positive pole, and the patient is able to partially regulate it by increasing or decreasing the pressure. The needle, attached to the negative pole, should be introduced at the margin of the growth, either perpendicular to the surface of the skin, or in a slanting direction, according to the size and depth of the nævus, and a current of from one to three milliampères used, according to the patient's fortitude. There is at once evolved at the negative pole, about the needle, hydrogen gas, which can be seen bubbling up, and a caustic alkali, which destroys a certain amount of tissue in proportion to the strength of the current and the depth to which the needle has penetrated. No arbitrary rule can, therefore, be laid down as to the time required, which is dictated entirely by experience. If the application is too protracted, too deep a scar results; if not sufficiently protracted, no appreciable effect is produced. The proximity of the insertions must be governed by the effect desired, which is to conbine the white of the scar-tissue with the red of the nævus so as to produce a general effect as much like the rest of the skin as possible. The punctures should not be closer together than one-sixteenth of an inch. If the mark is large, work can be facilitated by using a group of needles.

In the large angeiomatous nævi it is much harder to get a perfect cosmetic effect, for the scarring is apt to be deeper and more irregular, and on the whole a different procedure is advisable. The negative pole should be attached to the sponge this time, and in place of the steel needle a coarser one, of either copper, zinc, or silver, attached to the other pole. This should be introduced deeply into the mass, and a current of from three to five milliampères used, as positive electrolysis is less painful than negative. About the needles oxygen can be seen bubbling up; chlorine and an acid are also present and acting destructively upon the tissues. This reducing effect, however, is less active at the positive than at the negative pole.

The peculiar value of this method is, however, that, in addition to the local destruction of tissue, the needle is rapidly oxidized and decomposed, and there is deposited an oxychloride of copper or zinc, which is carried by the cataphoretic property of the current and diffused, coagulating the blood in the vessels. The needle is roughened after a short contact, just as a nail is rusted, and sticks closely to the puncture, but comes away easily enough after reversal of the poles of

the battery for a few seconds. In the great majority of cases of angeiomatous nævi it is safe to make definite promise of a good result. The pigmented moles are best treated by negative electrolysis, and as the pigment is not deposited very deeply beneath the surface, the needle need not be introduced so deeply, better results being obtained by passing it just beneath the surface from one side of the mole to the other, repeating the process according to the size of the mark.

In all these cases there will follow for several hours some signs of cutaneous inflammation, which can best be treated by means of hot water. No great change in the appearance of the growth need be looked for at the time, but in the course of a few days a crust will form and come away, leaving in its place a slight scar, which constantly tends to become thinner and fainter. When the pigmented moles have hairs in them, a fine needle attached to the negative pole and introduced into the hair-follicle will cause the hair to come out with very slight traction. This is generally much more painful, for, while the moles themselves are not at all sensitive, the hair-follicles are, and a correspondingly weak current must be used.

A NEW TREATMENT OF CHOLERA.

It is stated in *La Médecine Moderne* of September 5, 1896, that CHAUVIN, of Liege, has employed with advantage the following treatment of cholera, particularly for the relief of the cramps and vomiting:

℞ Dilute hydrochloric acid, 15 minims;
Pure pepsin essence, 20 minims;
Wine of opium, 20 minims;
Peppermint-water, 4 ounces;
Syrup of orange flower, 1 ounce.
A teaspoonful each hour.

This dose can, however, be diminished as soon as the medicine controls the attack to some extent, so that four teaspoonfuls a day may be sufficient. Sometimes fifteen minims of ether may be added to this mixture with advantage. It is needless to say that the dose varies with the age of the patient. The advantage of this mixture is that the hydrochloric acid and pepsin produce an artificial but normal gastric juice which has a useful antiseptic and other influence upon the abnormal alimentary canal. It also facilitates the use of the opium, calms digestion, controls peristaltic movement, and diminishes the exudation of liquid into the intestine and the multiplication of micro-organisms.

THE USE OF GALLIC ACID IN THE TREATMENT OF TUBERCULAR HEMOPTYSIS.

In the *Journal des Praticiens* of September 12, 1896, DEGUY, after quoting the paper of Capitan, already published in the THERAPEUTIC GAZETTE, asserts his belief in the use of full doses of gallic acid in this condition. The doses he employs vary from four to fifteen grains, and may be given in powder, pills, or solution. A very useful mixture is ten grains of gallic acid in four ounces of infusion of orange; this quantity may be taken each day. In other instances, if the hemoptysis is very abundant, gallic acid may be advantageously associated with ergotin as follows:

℞ Gallic acid, 30 grains;
Ergotin, 15 grains.
Make into twenty pills. Take five or more each day.

In other instances a prescription made up as follows is of advantage:

℞ Gallic acid, 2 grains;
Ergotin,
Powdered ipecac, of each, 1 grain;
Powdered digitalis, ¼ grain.
To be made into one pill.

Five or six of these pills may be used each day if necessary. In still other instances if cough is excessive the following may be used:

℞ Gallic acid, 2 grains;
Sulphate of quinine,
Ergotin, of each, 1 grain;
Extract of opium, ⅙ grain.
Make into one pill.

Five such pills can be given each day.

THE USE OF TELLURATE OF SODIUM IN THE TREATMENT OF NIGHT SWEATS.

JOGET recommends in a thesis, which is quoted in *La Médecine Moderne*, August 26, 1896, the use of the tellurate of sodium in the treatment of the night sweats of phthisis; his observations having been made in the service of Barre.

Some of the readers of THE GAZETTE may remember that this drug was recommended seven or eight years ago, about the time camphoric acid was recommended for the same purpose. The effect which it produces, in the belief of Joget, is distinctly antisudorific. The initial dose is one-third of a grain a day in ordinary cases. If the tuberculosis is much advanced and the sweats are severe and general, it is necessary to increase the dose to one grain, but larger doses than this are apt to produce digestive trouble. For

persistent effect it is necessary to administer the drug for three consecutive days. Pills are the best form, but alcoholic or aqueous solutions are readily made. Thus a prescription may be written for:

Tellurate of sodium, 2 to 3 grains;
90-per-cent. alcohol, 2 ounces.

A small teaspoonful night and morning in a little sugar and water.

It is claimed that this treatment will prove successful in sixteen out of twenty cases of tubercular night sweats. Its persistent use gives an odor of garlic to the breath.

THE SERUM TREATMENT OF SYPHILIS.

In the *Fortschritte der Medicin* of September 1 there is an abstract, by Dr. Dreysel of Leipsic, of an article of Tommasoli's, chiefly polemical, published in the *Giornale Italiano delle Malattie Veneree e Della Pelle*, called forth by the recent publications of Maragliano, Neumann, Mauriac, and Pellizzari, on the subject of the serum treatment of syphilis. He accounts for the fact that the treatment has accomplished less in syphilis than in other diseases, by the general lack of knowledge concerning the syphilitic virus, and the fact that all the lower animals are proof against the disease. As to the nature of the immunity of animals to syphilis, he believes this is due to materials that circulate in the blood, and is therefore hematogenous, while Pellizzari is of the opinion that the cause is closely connected with the tissues, since any congenital immunity must be of that sort, whereas acquired immunity must be set down as hematogenous. Tommasoli contends that, in the case of man at least, immunity, although acquired, may owe its cause to the tissues.

According to Pellizzari, the *conditio sine qua non* of immunizing experiments is that some material should be inoculated which, although but slightly virulent, is capable of exciting the production of immunizing substances in the tissues. "Is then," Tommasoli asks, "this condition fulfilled in Pellizzari's experiments, since he uses blood from human subjects whose syphilis is of eight, eleven, and thirteen years' duration?" A further objection made by Tommasoli against Pellizzari's experiments is that the most various kinds of serum were used on the same patients. He concedes, however, that possibly an amelioration of the course of the disease was the result.

Tommasoli next takes Mauriac to task for inaccuracies in his historical account of the serum treatment of syphilis, and claims priority for himself; if he was not the first to give serum injections in syphilis, he says, he was certainly the first to reduce the treatment to a practicable method. He then combats Maragliano's contention that the immunizing agent in the lower animals is some substance peculiar to themselves, one of which little can be expected when it is transferred to man; also Pellizzari's doctrine that there is no hope of finding specific antitoxins in the blood of persons affected with tertiary syphilis. It may be, he says, that what we now call syphilis is really twofold—that we must distinguish between the contagious disease and the non-contagious diathesis, between syphilis and "syphilism" (sifilismo).

His most recent experiments are divided into three series. In the first method, which he calls hydrotherapy, he used the ascitic fluid of a person affected with syphilitic disease of the liver. This he employed upon seven patients in the secondary stage, most of whom had had no previous specific treatment. The smallest number of injections given in any one case was eight, and the largest thirty-seven, in periods ranging from ten to fifty-seven days, and the total amount injected varied from 68 to 350 cubic centimeters. The largest single dose was eighteen cubic centimeters. The fluid was obtained with all antiseptic precautions, and used either fresh or after being kept in sterilized vessels with the addition of a few drops of chloroform; it was injected into the buttocks, and no serious mishaps occurred in any case. In most of the patients, soon after the injection, there followed indisposition, headache, giddiness, etc., but these disturbances always subsided speedily; in some there was a slight elevation of temperature; in several the temperature rose and the weight increased during the treatment. No albumen was ever found in the urine. As to the effect on the disease, all that can be said with certainty is that new symptoms made their appearance during the course of injections.

In the second method, or galactotherapy, he used the milk of two women who had secondary syphilis, latent in one of them. After proper cleansing of the nipples, the milk was pressed out and injected immediately into the muscles of the buttock. Of seven patients treated by this method, one had gummatous syphilis, but all the others were in the secondary stage. The number of injections varied from three to thirteen, and the total

amount injected into any one patient ranged from 30 to 100 cubic centimeters. Ten of the patients in the secondary stage were decidedly improved; the others showed no change. This method was based on the observation that in other infectious diseases, such as tetanus and diphtheria, the antitoxins pass into the milk.

In the third method, termed myelotherapy, he employed large quantities of the spinal cord of the ox. He had previously seen syphilitics relieved of malaise and osteocopic pains, by eating freely of ox-marrow, without specific treatment. In all, nine patients were treated in this way. Six of them had severe headache and pains in the bones and joints; two of the six had before been treated with the ascitic fluid; four others had had no treatment. The three remaining patients showed fresh lesions of the skin and mucous membranes. The fresh spinal cord of the ox was given either in the form of balls having powdered liquorice incorporated in them, or in that of an emulsion with milk. The smallest amount given in twenty-four hours was 300 grains; the largest 1500 grains. Of the three patients with cutaneous manifestations, none showed any improvement, although the treatment was continued for fifteen, twenty-seven, and thirty days, respectively. Of the six others, only three were kept under observation for any considerable length of time; at the end of ten days they were all relieved of severe sufferings and felt perfectly well.

The third method, then, so far as these observations go, seems the most promising, but the propriety of classing it as a form of serum treatment may be questioned.—*New York Medical Journal*, Sept. 26, 1896.

THE SUBLIMATION OF CALOMEL IN THE TREATMENT OF MUCOUS PATCHES.

La Médecine Moderne of August 29, 1896, describes the results obtained by BALZER and by MARMONNIER. Calomel is sublimed by means of any one of the ordinary calomel sublimators used in medicine, and is then collected by means of an inverted funnel, and carried to the mouth of the patient through a rubber tube of small size. Half a grain to one grain of calomel is sublimated, and the vapor is allowed to pass into the mouth for a very short period of time. It is best to direct the vapor from the tube upon each individual patch for three or four seconds, and if the patient holds his breath for that time comparatively little of the drug passes into his lungs. In the treatment of mucous patches about the genitals or the anus a similar method of direct application of the sublimed calomel may be resorted to. It is believed that this method of treatment is more efficacious than the application of nitrate of silver; the mercury is brought in direct contact with the syphilitic tissue, and it is not painful, as are nitrate-of-silver applications.

THE VALUE OF HOT SALINE IRRIGATION OF THE INTESTINE IN CASE OF UREMIA.

In the *American Medico-Surgical Bulletin* of September 26, 1896, GRANDIN states that he has seen cases where, after delivery of the fetus or after an abdominal operation, the kidneys refused to functionate, and where, with absolute certainty, uremic symptoms would supervene unless the excretory organs could be persuaded to do their duty anew. Acute suppression of urine to a greater or less degree, headache, spots before the eyes, clouding of the intellect, twitching—symptoms always of such bad omen—such is the clinical picture he has in mind, and for which he recommends, above the administration of drugs, continuous irrigation of the bowel with hot normal saline solution. While the catharsis which is indicated is awaited, while the problematical effect of one or another drug is hoped for, the intestine may be irrigated, with the result of most profuse diaphoresis and, in the relief of the congestion of the kidneys, the betterment of all the alarming symptoms. In the cases under consideration, what we aim to secure is free catharsis and diaphoresis, with consequent abstraction from the circulation of the toxic elements which are at the bottom of the alarming symptomatology. The physician is dealing with a complication which must either be relieved speedily or, as a rule, eclampsia, coma, and death ensue.

To irrigate the bowel properly he proceeds as follows: The woman is placed in the left lateral position, with buttocks elevated and head lowered. A large rectal tube is inserted into the bowel as far as may be, usually up to the sigmoid flexure. The rectal tube is connected with a gravity syringe, which is hung at least six feet above the patient's head. In case such a syringe be not at hand, the physician will find a funnel in every household, and this may be connected with the rectal tube by means of rubber tubing.

Hot salt water is used for irrigation. The strength of the solution should be about one per cent., and the temperature of the water in the receiver about 188° F. An attendant should hold the rectal tube at the anal margin to prevent its being expelled as, under the provoked peristalsis, the water is driven out of the bowel. From eight to ten gallons of water should be allowed to flow in. This accomplished, the woman should be wrapped in blankets and made comfortable in her bed. Meantime croton oil may be placed on the tongue, and glonoin may be administered in full doses hypodermically in the event of the character of the pulse demanding it. It may be stated here that, as a rule, in the condition under consideration, glonoin is called for, but the dosage must be large—that is to say, fully one-twenty-fifth of a grain, repeated half-hourly until the physiological effect has been secured. This drug offers us the readiest of all means for relaxing the spasm of the renal capillaries.

Very soon after the irrigation, profuse diaphoresis sets in, followed by abatement in the alarming symptoms, and shortly thereafter the kidneys may begin to excrete again.

The explanation of the effect of hot saline rectal irrigation is not far to seek. The nerve-centres are stimulated; the kidneys are directly stimulated; the skin is called into action; peristalsis of the intestinal tract is evoked. In short, every indication is promptly met.

THE TREATMENT OF HEMOPTYSIS.

In *La Médecine Moderne* of August 26, 1896, CAPITAN concludes an article upon this interesting subject. He divides the remedies which have been employed in the treatment of pulmonary hemorrhage into several classes, as follows: first, vaso-motor medicaments, or regulators of the circulation; second, those which act directly on the centres or nervous ganglia, as ergotin, hydrastis, hamamelis, digitalis, morphine, and atropine; third, those which act reflexly upon the nervous centres, emetics such as ipecac, tartar emetic, and full doses of Dover's powder, revulsives, purgatives, ice, hot water, and compression by ligature of the extremities. The drugs which act locally on the walls and on the contents of the blood-vessels are ergotin and the vegetable astringents, such as tannin, gallic acid, turpentine, or the mineral astringents such as alum, acetate of lead, iron, antipyrin, and sea salt. The general medicaments which can be employed are the tonic stimulants such as alcohol, ether subcutaneously, camphor, sparteine, and quinine, and the sedatives, opium, morphine, and the bromides.

Capitan believes that ergot is an extremely useful remedy under these circumstances, but he also recognizes that there are certain contraindications to its use, as increased arterial excitement or hemorrhage from the venous trunks. On the other hand, in hemorrhage from an arterial blood-vessel which contains a large number of muscular fibres, ergotin is very useful, but in hemorrhage from the pulmonary blood-vessels its employment must be accompanied by caution because it augments the venous tension. Very much larger doses of ergotin than are used for ordinary purposes should be employed in such cases—five or ten grains—but care must be exercised not to give large enough doses to disorder the stomach.

The evidence concerning the value of hydrastis is somewhat contradictory: it is stated that in small doses it acts as a vaso-motor constrictor and augments the blood-pressure; it has, however, been employed with marked success by Huchard in tubercular hematemesis. He gives twenty drops at a dose, repeated in the course of the day until the patient receives eighty drops. Should hydrastin be used, it may be given hypodermically in the dose of thirty minims of a ten-per-cent. solution.

He does not regard hamamelis as of great value in hemoptysis, but if it is used the fluid extract may be given in the dose of from fifty to eighty drops a day. Digitalis is necessary where there is in association with the hemoptysis marked evidence of cardiac failure; ordinarily, however, it is best not to employ it. Morphine is valuable because it quiets the heart and allays activity of the cerebral centres, so reducing blood-pressure; it is a very useful drug to associate with ergotin, and may be given in the dose of one-eighth to one-fourth of a grain hypodermically. Similarly, Capitan thinks, as did Brown-Séquard, it is often useful to combine with the ergotin and opium some atropine. In those cases where there is marked excitation of the arterial system, full doses of ipecac, sufficient to produce slight nausea, or tartar emetic, do good by reducing blood-pressure. In the way of revulsives and derivatives, active rubbing, or vesication, or the application of hot cloths or hot-water bags to the perineum, or ice in a small ice-bag to the chest, may be employed. If the hemorrhage

is sufficiently profuse to produce fainting, tight bandaging of the extremities is advisable. It is also claimed by some persons that where there is a slow persistent hemorrhage from the lung the use of an active purgative is useful, in that it draws the blood away from the affected part. Above all, it is necessary that the patient should be kept quiet. Whether much good is obtained from the administration of such vegetable astringents as tannin and gallic acid, is doubtful. Turpentine, however, in the dose of five to ten drops, sometimes seems of value.

Capitan believes that antipyrin is an exceedingly valuable remedy in hematemesis. Alcohol and ether, camphor and sparteine, along with quinine, are the drugs which are to be employed to overcome the intense weakness of the patient. Sometimes counter-irritation in the form of a sinapism or mustard plaster applied over the area in which the hemorrhage is supposed to originate is of advantage. The following prescription may be used for hypodermic injection:

℞ Ergotin, 75 grains;
Hydrochlorate of morphine, 1 grain;
Antipyrin, 20 grains;
Sulphate of sparteine, 3 grains;
Sulphate of atropine, 1-30 grain;
Distilled water, enough to make 3 drachms.

Of this, twenty minims may be given hypodermically, deeply injected into one of the muscles of the back or chest, and if necessary the injection may be repeated in half an hour should the danger be pressing. It is also advisable to administer part of the following prescription by the mouth every half-hour with a teaspoonful of broth:

℞ Ergotin, 30 grains;
Gallic acid, 7 grains;
Turpentine, 5 minims;
Syrup, 4 ounces.

Dose, a dessertspoonful to a tablespoonful.

CHLORATE-OF-POTASSIUM POISONING.

ISAACS contributes to the *American Medico-Surgical Bulletin* of August 22, 1896, a well prepared and largely bibliographical article on this topic. He tells us that the first symptoms of poisoning are thirst, and discomfort about the stomach, followed by pains in the epigastric and hypogastric regions and the loins. The heart action is at first increased, with full and bounding pulse, soon to be followed by weak heart-beat, with pulse small and thready or almost imperceptible. Vomiting, generally very severe and persistent, is among the first symptoms and almost invariably present, but may be absent when small portions of the dose are taken at intervals and slowly enough to allow of absorption as fast as taken. Diarrhea is a constant symptom, one of the first to appear and last to disappear. The stools are fluid and black or dark-green, or, as in the writer's case, black flocculi in a bright yellow fluid. Tenesmus frequently accompanies the diarrhea.

On the kidneys the first effect is an increased secretion of urine, with irritation of the bladder, which, if the dose has been large enough, is soon followed by dysuria and suppression, which may become complete. The little urine passed is almost black, deposits a sediment containing granular and hyaline casts and blood-corpuscles, and generally also contains a large amount of albumen. There may be, even in a fatal case, no noticeable suppression or discoloration of the urine, as in the cases of Drs. Sherer and Boude, both of which were fatal, and in the writer's own case, in which all the other symptoms were as severe as they could be and yet recovery follow. In the first two no examination for albumen is noted, but in the writer's there was no albumen in the urine. As to chlorate of potassium in the urine, Isambert's experiments go to prove that it is largely eliminated in this way, that it appears in fifteen minutes after ingestion of the drug, and continues for from fifteen to forty-eight hours. In none of the cases cited is any test for this mentioned, but in the author's own case, although the potassium was sought for, none was found—the quantity of urine obtained, however, was too small for proper examination.

Cyanosis is an almost constant symptom, and may be of the whole surface or of the extremities, and especially of the ears, nose, lips, fingers, and toes. It is usually accompanied by dyspnea, more or less by coldness of the extremities, and sometimes by rigors. In cases where this condition is marked, the hue of the surface is not always that of ordinary cyanosis, and is variously described as "blue as indigo," "bluish-ashen," "bluish-white-dusky," "resembling anemic skin discolored with nitrate of silver," and in the author's own case it was so decidedly dusky as to approach chocolate-color. He accounts for this by the simultaneous existence of jaundice, which at the time was to be recognized on the white of the eyes only, but with the subsidence of the cyanosis it became evident over the whole surface. The marked anemia caused by the destructive action of the

poison on the blood also contributes to modify the appearance of the cyanosis. Jaundice is often present, and, as above noted, when cyanosis is marked, it is visible only on the conjunctiva.

On the blood the salt evidently has a very destructive action, but what this action is does not seem to be understood. Different writers claim disintegration of the red blood-corpuscles, reduction of hemoglobin to methemoglobin, and change in the color of the blood to a chocolate hue. Of the cases cited in this article, in three, all of which resulted fatally, the results of microscopic examination of the blood are given: in only one was any change in the corpuscles noted, showing "altered blood-disks in masses as well as unaltered blood-corpuscles;" the other two showed no change in the red blood-cells, but in one there was an increase in the proportion of leucocytes. One of the cases (Dr. Willie's) showed chocolate color of the blood, but it is not stated whether this was ascertained from the blood itself or from the color of the surface, which might have been similar to that in the writer's case.

On the nervous system the effect of the poison varies from the production of headache and prostration to stupor, coma, or convulsions. Stupor followed by coma, either partial or complete, is generally present in severe cases. Remission with apparent improvement may take place, only to be followed by relapse of all the symptoms. Depression may alternate with mental excitement. Paralysis of the muscles of vocalization and deglutition was noted in one case, which eventually recovered.

AN OPERATION FOR VALVULAR STRICTURE OF THE URETER.

FENGER (*American Journal of Medical Sciences*, December, 1896) reports a case of valvular stricture of the ureter operated upon successfully. In cases of hydronephrosis or pyelitis with distention (pyonephrosis) it is not uncommon to find comparatively narrow or thin-walled semilunar valves located transversely in the ureter. These open upward, have the same mechanical action as the valves in veins, and stop the passage of liquid through the ureter on its way from the kidney to the bladder. They are sometimes single and sometimes multiple, two or three in the same ureter. They have been depicted in Rayer's atlas, and are not uncommonly mentioned in the descriptions of specimens in the literature. They cause a gradually increasing impediment to the flow of urine, and effect dilatation of the ureter above and usually near to the valve, so that a ureter with multiple valves will present as many dilatations and constrictions as there are valves. It is natural that if small stones form in the kidney they should be arrested at the valves.

The patient, Mrs. G., aged thirty-two, in 1880, at the age of seventeen years, after jumping from a wagon to the ground, at once experienced pain in the right side immediately under the ribs, so severe that she fainted; probably the kidney was dislocated. Remittent attacks of pain followed, reawakened after her first pregnancy, in 1885, to disappear for eight years, returning in 1893, subsequent to miscarriage, to become intermittent or almost constant. Pyonephrosis, with tumor of right kidney, was diagnosed. Pelviotomy was performed August 6, 1895, as follows:

The patient was anesthetized with ether and placed on the left side on a cushion. An incision was made between the twelfth rib and the rim of the pelvis forward for about nine inches from the border of the erector spinæ muscle. The kidney was large, with but little perirenal fat, and was freely movable. Two small cysts presented on its convex surface about the size of a pea, which contained clear fluid. A part of the kidney-tissue which included these cysts was removed for examination. After isolation of the pelvis, which was somewhat dilated, but in which no stones could be felt, Fenger laid bare the ureter and felt a nodular mass two inches below the pelvis. He then incised the pelvis longitudinally, and about an ounce of urine escaped, from which cultures were subsequently made. The little finger was then inserted into the dilated ureter for an inch without discovering a stone, but upon manipulation with the other hand four stones were squeezed up into the pelvis and removed. A sound passed down from the pelvis into the ureter was arrested two and half inches below the pelvis, at a point where a somewhat soft thickening was felt on palpation. A longitudinal incision was now made, three-eighths of an inch long, into the ureter, upon the end of the sound above, through and below a transverse valvular stricture. A probe inserted through the opening in the ureter below the stricture passed easily down into the bladder. By holding the longitudinal wound open and stretching this part of the ureter over the index finger the operator was enabled to clip off the valvular stricture

from within the ureter with scissors, leaving the muscular and internal coats of the ureter intact. A plastic operation was performed on the ureter, and a No. 12 flexible bougie inserted from the wound in the pelvis into the ureter. The wound in the pelvis was left open. Upon digital exploration through this wound, the calices were found moderately dilated, one of them containing a small stone, which was removed. No other stones were found after careful examination. On this account it was not considered necessary to incise the kidney on its convex surface. Rubber drainage-tubes were then inserted, one down to the wound in the ureter, and another to the pelvis of the kidney; these tubes were surrounded with gauze. The external wound was closed with heavy silk sutures.

The operation lasted two hours. At the close the patient was in good condition, pulse strong, respiration good. She vomited twice after the operation. In the evening she was catheterized and two ounces of dark-brown urine withdrawn. She complained of severe pain in the wound. During the night she passed four ounces of urine, but toward morning the pain decreased, and she finally recovered entirely.

It will be seen that the operation for infected cysto-nephrosis in this case was not nephrotomy, as the convex surface of the kidney was not divided at all. Pelviotomy was performed, partly for the removal of the stones squeezed up out of the ureter, and partly for the exploration of the ureter and calices.

Exploration of the ureter with the sound led to the detection of the stricture, a valve, which was excised through a longitudinal opening in the ureter at its seat. Fenger considers this operation preferable to excision of the entire wall of the ureter and invagination after Van Hook's method, as it gives the least possible shortening of the canal. This may be of importance if more valvular strictures have to be operated upon.

Exploration of the calices can be made through an incision in a somewhat dilated pelvis when the latter is wide enough to permit of exploration with the finger and sound. For additional security against leaving stones in hidden calices with narrow entrances, it would be well to explore through the convex surface of the kidney with steel needles. When this is done in addition to digital exploration through the pelviotomy wound, there is as little risk of overlooking stones as if the convex surface of the kidney were divided; moreover, hemorrhage is avoided, the operation on the renal pelvis being entirely bloodless.

For the local treatment of pyelitis, drainage through the wound in the pelvis will be sufficient, at least in ordinary cases of stones and valves in which, by removal of the cause, we may reasonably expect the pyelitis to come to an end.

TREATMENT OF BACKWARD DISPLACEMENTS OF THE UTERUS.

H. A. KELLY (*American Journal of the Medical Sciences*, December, 1896), in a paper on the above subject, reaches the following conclusions:

The various operative methods cited for treating retroflexions resolve themselves into two classes: the direct, which attack the body of the uterus; and the indirect, which deal with the uterus mediately by the round, the broad, or the utero-sacral ligaments. Of the indirect methods, the two which promise the best results are: that of Pryor, acting through the vagina on the cervical end of the uterus in order to produce enough scar-tissue about the utero-sacral ligaments to hold the cervix well back in the pelvis; and that of Pagenstecher, which endeavors to accomplish the same thing by suturing and shortening the round ligaments. The other indirect method is that of Alexander, acting upon the opposite pole of the uterus by means of the round ligaments; the best elaborated technique of this procedure is that of Dr. Edebohls, of New York.

The direct methods are two: vaginal fixation, and abdominal fixation or suspension. The vaginal operation has been practically abandoned, and the only abdominal operation which has thus far stood the test of prolonged trial in a number of cases is Kelly's. His method is as follows:

The case is carefully selected, avoiding patients who are simply hysterical and whose complaints are of a general nature in no way dependent upon the local lesion; also those whose symptoms are not pronounced, but who apply for treatment simply because they imagine they cannot have good health as long as retroflexion exists.

If the case is one calling for operation in a woman who has borne children, the vaginal outlet should first of all be seen to, and restored if it is broken down.

The operation of uterine replacement is performed in the following manner:

The instruments needed are a needle-holder, curved needles, scalpel, silk suture, two pairs of artery-forceps, silver wire and catgut, and an elevator.

After due preparation of the patient, the bowels and bladder having been freely evacuated, she is placed upon the operating-table with hips elevated. It is best to leave her in this position one or two minutes before opening the abdomen, in order to allow the intestines to gravitate toward the diaphragm. An incision three to four centimeters long is then made just above the symphysis pubis in cases in which the abdominal walls are thin or of medium thickness; a longer incision may be necessary in stout women. The length of the incision is less than in any other abdominal operation except for evacuation of ascitic fluid, and owing to its low position the scar is in time completely hidden, in the course of a year or two becoming scarcely visible.

The peritoneum is opened the full length of the skin incision, caught at once on both sides with forceps, and drawn outward. One or two fingers are now introduced through the incision, and the fundus of the uterus caught and raised into anteflexion.

Kelly invariably uses, as suture material for suspending the uterus, a medium-sized silk, about a half-millimeter in diameter; catgut is absorbed too quickly to insure permanent adhesion, and he has had no experience with silkworm-gut or silver wire, silk being so much easier to handle and having given such perfect satisfaction.

The suture is passed in the following manner: One side of the incision is lifted up by two fingers so as to expose a portion of the anterior abdominal wall on its peritoneal surface. The movable peritoneum and sub-peritoneal tissues are then transfixed with a curved needle at a point one or two centimeters away from the lower angle of the incision; the amount of tissue taken is about one centimeter in width and two or three millimeters in depth. The same suture is then passed through the posterior face of the uterus, one or two centimeters back of the fundus, and finally brought out through the peritoneum and sub-peritoneal tissue on the opposite side of the abdominal wall at a point corresponding to that of entrance. When this suture is tied, it at once brings the uterus up snugly against the anterior abdominal wall in anteflexion.

One more suspensory suture is all that is needed to hold the uterus permanently in anteposition. This is passed like the first, but about a centimeter higher up on the abdominal wall and a half-centimeter lower on the posterior surface of the uterus.

The second suture having been tied, the abdominal wound is closed by sewing up the peritoneum with one or two silver wire mattress-sutures, and finally closing the superficial fat and skin with continuous catgut sutures. Before the peritoneum is completely closed the patient should be dropped to a horizontal position to let the air out from the peritoneal cavity.

Sometimes, when the uterus is brought forward out of retroflexion, the fundus lies so deep in the pelvis, and is so completely covered by coils of intestine, that it is exceedingly difficult to get at it to pass the first suture; in the average case the symphysis pubis forms a satisfactory point of counter-pressure to support the fundus pressed against it by two fingers while the first suture is being passed; but in the class of cases referred to, when this simple maneuver does not avail, the fundus may still be brought within easy reach by using an elevator, forming an artificial point of counter-pressure during the introduction of the suture.

Upon closing the incision a simple dressing of dry sterilized gauze is applied, and the patient is kept in bed for three weeks. After getting up she ought to take only gentle exercise for some weeks longer, and for at least six months avoid lifting and heavy work. The bowels should be kept emptied at regular intervals, and, above all, the bladder should be emptied not less than once in three or four hours, according to the amount of excretion; it is possible for an overdistended bladder to tear a suspended uterus away from its moorings.

Between October 1889 and October 1896, Kelly has operated upon two hundred cases of retro-displacements in the Johns Hopkins Hospital and upon nineteen in his private hospital, besides other cases operated upon outside. In no case has there been a death in any way connected with the operation, either during the convalescence or at a remoter period, and he knows of no case in which there has been a hernia or any serious interference with any function of the bladder. In tracing the subsequent histories he has learned of pregnancy in fourteen cases, in but one of which was there any difficulty attributed to the operation; that was one of the earliest cases, operated upon in 1889, in which a protracted suppuration in the wound

brought about such dense adhesions between the fundus and the abdominal wall that the patient, at the termination of her labor some years later, was only delivered by the forceps. Kelly has seen but four failures after this operation.

The operation just described relieves the retroflexion by holding the uterus in a position of great mechanical advantage to meet the forces which tend to displace it. The intra-abdominal pressure now falls upon its posterior surface and, instead of tending to produce a retroflexion, actually increases the anteflexion. While the immediate effect of the operation is to fix the uterus to the anterior abdominal wall (ventro-fixation, hysteropexy), this is not the final result obtained, which is a suspension of the uterus by its posterior surface, allowing it the full freedom of all its normal movements. If, for example, the patient is examined two or three months after the operation, the body of the uterus will be found lying in easy anteflexion in contact with the anterior abdominal wall; the examiner will also find that he is able to raise it without resistance, and to push it backward or sidewise. One position, however, it will not take; he cannot throw it again into retroflexion. The explanation of this freedom of motion is found in the connection of the uterus with the anterior abdominal wall by one or two bands of adhesion.

Almost all writers upon the subject of the operative treatment of retroflexions have been in the habit of discriminating between various classes of cases; for example, a distinction is made between those past the childbearing period and those still within it; and operations such as vagino-fixation, which experience has shown ought not to be performed during the childbearing period on account of the danger to patient and child in case of pregnancy, may very properly be performed in a woman who is not likely to become pregnant.

A distinction generally recognized is that between adherent and mobile retroflexions. Some operators, while unwilling to open the peritoneum in the case of a non-adherent movable uterus, feel that sufficient justification for celiotomy exists when there are posterior adhesions or disease of one or both adnexa. Although this distinction was emphasized at the recent Gynecological Congress at Geneva, the author has not dwelt upon it here, as he has shown by his own statistics that the danger to life from a properly performed suspensory operation is no greater than in any of the so-called simpler operations. In addition to this, the peritoneal incision affords an opportunity for inspecting the appendages and discovering diseases often unsuspected, such as hydrosalpinx and adhesions of less grade; in one of Kelly's cases a commencing papilloma of the right ovary, not larger than a split pea, was found.

THE CAUSES OF DEATH AFTER LAPAROTOMY.

FRITSCH (*Medical Press and Circular*, Oct. 28, 1896) calls attention to the fact that the body is not often free from germs, and that different tissues behave differently under invasion of bacteria; that, in general, various people have various affinities as regards various cocci. Cocci are rapidly swept into the peritoneum and into the blood, and destroyed. But in order that they may be harmless, there must not be too many of them; the heart of the host must be healthy and his circulation undisturbed—conditions that are opposed by prolonged operation under chloroform narcosis, loss of blood, and cooling; and the functions of the tissues must be normal. Cooling is of less moment than contact with air, and the altered pressure after opening the abdomen. The injury thus caused is often visible to the eye. It is still greater when the peritoneum is roughly and improperly treated. Even without direct infection the operation is dangerous. It must not be forgotten that cocci accidentally introduced or coming through from the intestines may find conditions suitable for their growth. Generally the weakened intestines recover their tone. If, therefore, after twenty-four hours the heart is strong and the pulse good, there is no danger; but if, with a weak heart and a quick pulse, the normal function of the bowel is not restored, there is. The two conditions which strongly predispose to infection are: injury to the heart, and interference with the peritoneum or intestinal functions. Patients on whom laparotomy has been performed do not die because they have become infected, but they become septic because they die or while they are dying.

The course of unfavorable cases is the following: After the operation patients wake distressed; breathing is heavy; the bandage presses heavily; the characteristic symptom is the cardiac weakness and the quick, feeble abdominal pulse that is almost pathognomonic; the abdomen becomes distended, the

countenance pale; there is thirst and vomiting, increase of temperature, and tympany; the pulse becomes worse. These symptoms are not due to ileus, peritonitis, or sepsis.

The logical deduction from this view is that in cases of organic or weak heart we should not operate, but wait. Before operation, starving or drastic purgation is contraindicated. The technique must be good; the after-treatment, very careful washing out of the stomach, warm enemata, tonics, quinine subcutaneously. Lives are to be saved by careful selection of cases, good preparation, conservative operation, and careful after-treatment.

THE STERILIZATION OF SYRINGES BY BOILING.

In a communication to the *Centralblatt für Chirurgie*, 1896, No. 27, HOFMEISTER claims to have solved the question of the sterilization of syringes. Although much time and thought have been expended in the effort to devise means by which syringes for surgical and bacteriological purposes could be easily and quickly rendered sterile, no satisfactory method has been proposed heretofore. Of all the new patterns of syringes that have been recommended, none has sufficient merit to displace the old form with the leather packing, and yet it has not been possible to make the latter aseptic.

The observation, by the author, of the fact that catgut could be boiled without injury after first hardening in formalin solution, led him to apply the same process to leather. It was found that common leather which was allowed to stand for twenty-four hours in a two- to four-per-cent. solution of formalin could be boiled in water without losing its softness, durability, or elasticity. Leather so prepared has been boiled for ten hours without damaging it; a slight deepening of the color was the only change to be observed. On the contrary, leather not so treated becomes, soon after boiling, so soft as to be useless, and can be torn easily; after drying, it makes a mass as hard as stone, which can be crushed into powder.

The experiments brought out the fact that the formalin-leather which was boiled one hour each day for several days, and dried each time, retained its natural and useful qualities better if subjected to the formalin solution before each boiling than if macerated once only.

These experiments led him to adopt the following process for sterilizing syringes:

1. Only such syringes as consist of glass, metal and leather are suitable. The metal parts should not be fastened by putty, but should be screwed to the cylinder.

2. The piston with the leather packing is taken out and placed in ether or benzin to remove the oil.

3. It is then transferred, for twenty-four to forty-eight hours, to a two- to four-per-cent. formalin solution.

4. After rinsing thoroughly, the syringe may be put together and is ready to be boiled.

5. When ready for boiling, the air is to be driven out of the cylinder by filling with water. Glass syringes should be put in cold water and gradually heated.

6. From time to time the piston with the leather packing is to be placed again in the formalin solution. After removing the oil the leather should be examined to see that it has not shrunken. If the piston fits closely, then it will not shrink in the subsequent steps of the process.

After two months' trial the method has proved itself to be practical.—*American Journal of the Medical Sciences*, November, 1896.

TREATMENT OF VENEREAL BUBOES.

PERRY (*American Journal of the Medical Sciences*, November, 1896) considers the treatment of non-suppurating buboes under the headings: (1) by external applications; (2) by the hypodermic injection of medicinal agents into the substance of the gland; (3) by incision; and (4) by excision.

The most important means to employ when a bubo is seen early and it is decided to try abortive measures, are rest in bed, belladonna ointment, and spica pressure of the groin. In a very few cases these measures will cause a disappearance of the inflammatory symptoms. The writer has long since given up this treatment, however, as unreliable and unsatisfactory, and now treats all buboes seen before suppuration by another method.

Several antiseptic substances, for injection into the inflamed gland, have been used as a means of aborting buboes. Dr. M. K. Taylor several years ago called the attention of the profession to this method of injecting a solution of carbolic acid; he claims that one injection generally succeeds in aborting a bubo, that suppuration is rare, and that a cure is effected in eight to ten days. He uses a solution of ten grains to the ounce, and injects twenty to forty minims.

Harvey also speaks of the efficacy of this treatment, and says the time of election for the injection is just prior to suppuration. Others have tried carbolic acid, but have been disappointed with the results obtained, and at the present time this agent is seldom employed.

A one-per-cent. solution of bichloride of mercury has also been highly lauded as an efficient remedy in this class of cases. Nannino reported twenty-seven buboes successfully treated by injecting this drug. The author has treated five cases by this method, in all of which there was intense pain, produced by the medication, that lasted for hours; in one case there was severe constitutional disturbance, the febrile symptoms lasting six days; and all went well on to the formation of an abscess, necessitating an incision. The average duration of treatment in these cases was seventeen days. He soon discontinued the method on account of the severe pain it produced.

Dr. Welander, who first called attention to the marked influence of benzoate of mercury in the treatment of buboes, reports some extraordinary results, and says that in the majority of non-suppurating cases it will cause a subsidence of the inflammatory symptoms in a few days, and that resolution will be prompt. Of seventy-eight cases reported by him, fifty-six were cured without any suppuration; but in the remaining number some pus formed in the centre of the gland, necessitating a puncture. Spitschka confirms the results of Welander. Brousse and Botherat reported ten cases treated by this method, nine of which suppurated.

The writer's experience with the benzoate of mercury has been so satisfactory that he employs it in the treatment of all non-suppurating buboes, and also in those in which the formation of pus is suspected but distinct fluctuation is absent. In fact, his experience teaches that it acts most beneficially in buboes in which suppuration is threatened.

The injection should be made under the same aseptic conditions as when a surgical operation is contemplated. He generally injects twenty or thirty minims with a hypodermic syringe, passing the needle well into the substance of the gland at one or more points.

The medication causes a burning pain, which usually lasts about two hours, and some constitutional disturbance; fever ranging from 99° to 104°, and continuing for a few days. In some cases there is rise in temperature only after the first injection, while in others there is an elevation after each use of the drug. The shortest period of fever recorded was one day, the longest six days, and the average three days.

In two or three days after the commencement of treatment the bubo is much diminished in size, and resolution is taking place. In all of the author's cases some pus, generally small in amount, formed in the centre of the inflamed gland, but at the same time resolution was taking place in the periphery. As soon as any suppuration is detected, a small puncture is made, all the pus squeezed out, the small abscess-cavity irrigated with peroxide of hydrogen, and an antiseptic dressing applied. In a few days all discharge ceases, the remaining induration rapidly subsides, and the bubo is cured.

In all, Perry has treated twenty-two cases by injection with one-per-cent. solution of benzoate of mercury in non-suppurating buboes. In all, 306 days' treatment was given, and the average time necessary to effect a cure was 13.9 days.

He considers this treatment far superior, in the majority of buboes, to excision of the inflamed glands, since it is a trivial one, there is no danger of an accident and no need of an anesthetic, the scar is scarcely noticeable, and the time necessary to effect a cure is much shorter. On the other hand, the excision of a large bubo is not a simple operation; it leaves a large cavity which, in the vast majority of cases, must heal by granulation, weeks being consumed before cicatrization; and finally a large and unsightly scar is left. Again, discarding everything in this comparison except the element of time, and weighing the most favorable statistics the author has seen on excision—union by first intention in one-half of the cases—still the scales tip in favor of the benzoate treatment.

In recent years excision has become the favorite method of many surgeons for treating non-suppurating buboes, but the results obtained have been so unsatisfactory that several who formerly excised all inflamed glands have abandoned the operation and treat by external application until pus forms, when the bubo is incised and treated as an ordinary abscess.

Excision of all implicated glands means a difficult and somewhat hazardous operation in a dangerous anatomical region. Accidents have happened in the hands of the most skilful operators; the most serious are wounds of the femoral and internal saphe-

nous veins. The hemorrhage is often profuse, and complete enucleation of all the diseased glands leaves a cavity that seldom heals before considerable time has elapsed.

Dr. Watson believes in thorough excision, and reports twenty unselected cases, in ten of which he secured union by first intention. His statistics are the most favorable, and probably few other surgeons have been as successful. Martin says the time consumed will be from two to eight weeks, depending upon the size of the bubo excised.

The treatment of suppurating buboes may be (1) by incision and treating as ordinary abscess; (2) by incision and curettement; (3) by puncture, evacuation of pus, and distention of the cavity with medicinal substances; and (4) by thorough excision of all diseased glands.

The treatment by incision alone has not yet yielded very brilliant results, the average number of days consumed being thirty-two.

Incision and curettement has not given much better results than simple incision. It is true, though, that the cases in which curettement is used are generally more severe, and consequently the results are not so favorable as if this extreme measure were used in all suppurating buboes. This treatment is advisable in those cases in which the skin has been destroyed and there is left an unhealthy granulating ulcer.

Karl Szadex reported 274 cases of suppurating buboes treated by incision, curetting, and packing with iodoform gauze. The average duration of treatment was thirty days.

Dr. Scott Helms removed the pus by aspiration, injected the cavity with a solution of carbolic acid, and after this was thoroughly squeezed out, distended the abscess cavity with a ten-per-cent. iodoform ointment.

Fontan treated the incised bubo with iodoform and vaselin, and reported forty-one cases. The average time of treatment was six or seven days.

Dr. Otis reported sixteen buboes treated by this method; nine were cured in six days, one in fourteen days, and one in twenty-three days.

Dr. Hayden describes his treatment as follows: Make a small puncture through the skin at the most fluctuating point of the bubo; thoroughly evacuate the pus; irrigate the cavity with peroxide of hydrogen, then with bichloride solution, 1 to 1000; press out all the fluid; distend the cavity with warm vaselin holding in suspension ten per cent. of iodoform; and apply a cold bichloride dressing to favor congealment. The patient should be kept quiet for forty-eight hours, and the dressings removed on the third or fourth day; if no pus has formed, another injection of iodoform ointment is not necessary; but if the suppuration has not entirely ceased, the bubo should be re-dressed in the original manner. He reports fifteen cases, in which the average duration of treatment was twelve days, and in twelve of these one injection was sufficient.

From the above statistics the writer states that he is led to conclude:

1. That buboes are probably caused by the absorption of chemical poisons, the result of the action of the micro-organisms in the chancroid, and not by the entrance of the micro-organisms themselves into the lymphatics.

2. That the benzoate of mercury yields such satisfactory results that it should be employed in the treatment of non-suppurating buboes, and excision reserved for those cases in which benzoate has failed.

3. The injection of iodoform ointment should be used in the treatment of all freely suppurating buboes, since statistics show that it yields much more satisfactory results than the other methods of treatment applicable to this variety.

4. Incision and curettement should be used in a few cases in which the skin has been destroyed and the ulcer presents an unhealthy granulating surface.

5. Excision should be reserved for cases that have not yielded to other treatment, and for those in which there are several foci of suppuration.

DRAINAGE IN ABDOMINAL SURGERY.

BISHOP (*Medical Press and Circular*, Oct. 28, 1896), after a consideration of the theoretical advantages of drainage, holds that artificial drainage is distinctly required in operations on tubes, wherever practicable, and in all septic operations; that it is beneficial in cases where pure asepticity is doubtful; and that it is distinctly hurtful in cases which are absolutely aseptic and in which the patency of a tube is not involved.

The means by which drainage may be carried out are very numerous, and must be adapted to the nature of the case. The central idea is a tube of some kind, and a force by means of which the tube is emptied and kept empty, so that the end nearest

the absorbent wounded surface is kept dry. The tube may be a large one, as in the glass tube used often after laparotomy, or an extremely minute one, as in the case of drainage by strands of silk or gut. The force may be supplied by a suction-pump, as is done in drainage by a large glass tube; or it may be capillarity, as in Mikulicz's gauze drain; or, again, the action of gravity—this is not often obtainable in abdominal surgery, although it is sometimes taken for granted when using a vaginal drain; and lastly, the tube may be a natural one; and the force also one of the natural forces of the body, as in drainage by the intestinal canal, where the force is that exerted by the muscular wall of the intestine.

The materials used for drainage may be best considered when the matters drained have been reviewed. These last are blood, lymph, pus, bile, urine, and feces.

Blood simply should never require artificial drainage, being in itself aseptic. If it exists in quantity, it means a bleeding vessel, which requires pinching, torsion, ligature, sponge-pressure, cautery, or solid astringent, as the case may be. If the amount lost is less than this, and is aseptic, it will be absorbed and will do no harm; if more, it will clot and block up any drain introduced, and in an hour the drain will be perfectly useless. The true way of dealing with small quantities of blood or large amounts of lymph is by setting the natural suction-pump to work. This will be referred to later.

Lymph is a material which does not require drainage, for the same reason. It does not show its presence in quantity at the time of operation, and should be looked upon as building material pure and simple. If the amount thrown out is more than is required, it should be left to the natural process, which will soon dispose of it.

The presence of pus may be said to be the one main reason for drainage. Pus may escape into the general peritoneal cavity before an operation, as in pyosalpinx. In most of such cases it is advisable to leave a drain when closing the abdominal wound, so that any material of this kind left behind may be carefully removed. If the abscess can be opened without disturbing the limiting adhesions or membrane between it and the peritoneal cavity, drainage of the abscess itself is imperative, and this can often best be done by a gauze drain *a la* Mickulicz. By this means the space can be kept dry, the inner pledgets of gauze being frequently changed, while the actual surface of the walls is not disturbed. More especially is this mode of drainage useful if the walls of a cavity have to be sewed to the parietal peritoneum in consequence of inability to finish removal of suppurating cyst from too intimate adhesions to the surrounding structures.

When the exit of bile has to be provided for, rubber tubes are probably the best to use; glass would be preferable, but the irritation of its inner extremity and the possibility of fracture is against its use in this situation.

When urine and urinary organs are in question, we require drainage in three situations, for different reasons.

In the region of the kidney, if the kidney has simply been opened, we require a drain to carry off as quickly as possible the unavoidable leakage of urine, and prevent its infiltration into the connective tissue and fat around; and here large-size rubber tubes are best. In this position, gravity is the force available. When the kidney has been removed, it is wisest to use a tube for two days, since air is sucked into the tissues by the respiratory movement of the diaphragm, and without a tube its exit is impeded by the valve-like action of the soft tissues which encompass the cavity produced. But the outer opening of the drainage tube must be very carefully protected so that any air that enters may be rendered aseptic by passing through cotton wool or gauze.

MacEwen introduced the use of decalcified chicken-bone drains. The writer has not had satisfactory results from their use. The idea is to obtain a drain which shall not require removal—that shall act during the time required, and then become absorbed, so allowing the original dressing to remain unchanged until healing is complete. The chicken-bones do act for a while, but then they form a flocculent mass which effectually blocks the further exit of fluid and delays effective union. The same objection applies to catgut strands, which make a smaller but hardly less objectionable mass.

Drainage by capillarity is the object sought to be obtained by the latter method, as also by strands of horse-hair or silkworm-gut. Horse-hair is inadmissible inasmuch as, owing to the manner in which the epidermic scales of which it is composed are set, it will travel either into or out of the wound in which it is placed. Silkworm-gut is the best material for this kind of work. But drainage by capil-

larity appears to be based entirely on a false idea; only serum, blood and lymph can be removed by it, and these imperfectly, and if the wound be aseptic the method is ineffective.

The most important means of drainage we possess in abdominal surgery, however, is the natural suction-pump, the intestine. This is an advantage which abdominal surgery possesses over that of all other regions in the body. All writers on the after-treatment of laparotomies, etc., lay stress upon the desirability of securing early action of the bowels, and such action is looked upon as in most cases securing safety from peritonitis. But the exact manner in which that safety is produced has not, as far as the writer knows, been clearly defined. It is not, of course, merely because the lower bowel has been emptied, that an operator feels safe. The presence of decomposing, offensive material in the rectum is, of course, objectionable, but the absorptive power of the rectal mucous membrane is not great, and the mere removal of this load would not make the immense difference to the prospects of the patient that is associated in the surgeon's mind with the fact that the bowels are in action. Moreover, in all these cases the bowels have been cleared before operation, and often enough the amount passed is but small in comparison with the relief experienced. Indeed, the surgeon is not very anxious about any patient who has passed flatus naturally, even if no solid matters have escaped per anum. The passage of a stool only emphasizes the fact that the bowel is acting normally, and shows that it does so with a fair amount of strength.

The small intestine fulfils many duties in the economy, but for our purpose, and after operations involving the peritoneal cavity, it may truly be looked upon as a living suction-pump, or a long sponge, which when properly acting, by the vermicular action of its muscular coat, is constantly drawing up, through the myriad stomata in its serous coat, into the lymph-channels of its walls, all fluids from the cavity which it completely fills, and forcing such fluids onward into the blood-stream, where they can be dealt with by the various excretory organs. By its steadily recurring rhythm of contraction and relaxation not only are its fecal contents passed on into the rectum and so out, but any fluids in the peritoneal cavity are sucked up and pressed onwards away from the free surface of the peritoneum, where they might form a stagnant pool in which bacteria could develop. Thus the salutary result of the action of the gut is not due to the actual passage of feces through it, though doubtless this assists, but to a separate function, the activity of which, however, we can gauge by the coarser and more visible results.

That the utmost good may result from such action, it is evident that it should be started soon. Should it be delayed, the amount of fluid to be disposed of in the abdominal cavity may become too great to be easily and expeditiously carried away; some fluid will then remain in a state of rest, under conditions of warmth, etc., eminently favorable to the development of bacteria; and when this in its turn is absorbed, poisoned toxins are present and are absorbed with it, producing septicemia, or the paralyzing effect of these toxins may be so great as to prevent any effective action on the part of the natural suction-pump. Peritonitis will then rapidly develop.

Tait, as is well known, advises the use of saline aperients, seidlitz powders to be begun at the earliest possible moment upon the appearance of any sign of peritonitis. If the foregoing explanation of the benefit to be derived is correct, however, it will be seen that it is wiser not to wait for any such signs, which evidence the result rather than the cause of the necessity for such action. The natural suction-pump will act with more certainty as well as with more force when it has but little, and that innocuous, fluid to act upon, rather than when that fluid has developed poisonous qualities which at the same time tend to paralyze its action and are themselves dangerous to the system through which they must pass before they can be finally eliminated.

Calomel in small doses, frequently repeated, has served us very well, but there is an advantage, of course, in using a saline purgative if possible. The presence of a saline fluid in the intestine of a higher specific gravity than that outside favors dialysis, and tartrate of soda in one- to two-drachm doses has proved very effectual, while free—in the writer's patients—from the risk of causing vomiting. Turpentine enemata assist; but the old-fashioned soap-and-water enema mixed with half an ounce of castor oil has been found the most effective of all. This has come to be relied upon as certain if used after two or three doses of the soda salt have been given. But, for the reasons insisted upon above, treatment is begun early.

THE TREATMENT OF CERVICAL ADENITIS.

In the *Boston Medical and Surgical Journal* of December 3, 1896, F. M. BRIGGS calls attention to a valuable method of treating this affection.

For a period of five years he has acted upon the theory that cervical adenitis is not a source of systemic infection, that the glands can be left *in situ* with perfect safety, and that their excision is called for only in exceptional cases. With every year, experience proves the soundness of this conclusion.

The first object of treatment in all cases of cervical adenitis is to bring about subsidence, by treatment of the cause if that is evident, by direct treatment of the gland itself if no cause is at hand. In chronic cases even where the cause can be clearly demonstrated, treatment must often be both general and local. As regards the use of drugs, this must depend upon the individual case: mercury, iodide of potassium for syphilis, iron for anemia, quinine, strychnine, nux vomica, calisaya, cinchona, malt, etc., or any proper combination of such drugs, as indicated. Cod-liver oil is surrounded by a time-honored halo; it is a question whether it has the specific action on these glands that it is supposed to have; it is indicated where the condition of the patient shows that fat is needed; one teaspoonful three times a day is enough for any adult, and a smaller quantity for a child.

As regards local treatment, the external use of tincture of iodine is often of great benefit, but it should be applied intermittently, not continuously. It should be painted on heavily for three or four days, then omitted until the skin has recovered, and again applied for three or four days. Even where there is no immediate apparent effect, Briggs continues its use in this way for a long time, and has seen subsidence occur in cases which he thought to be hopelessly chronic—whether as a result of treatment, or a coincidence, he is unable to say. Personally, he gives the benefit of the doubt to the iodine.

Contractile collodion, applied thickly, sometimes causes subsidence. It is indicated only where one or two glands are involved and where they are comparatively soft.

Injections of carbolic acid into the gland tissue is recommended, but as the author has never tried this method he can give no opinion as to its merits.

It would not be an overestimate to state that in fully ninety per cent. of all these cases, we can expect one of two results, namely, subsidence or pus. Supposing, however, that in any given case subsidence does not occur, and no abscess results, but the indolent masses stay enlarged, with little or no change; should such glands be excised? The writer is strongly opposed to their removal until there is positively no further chance of a cure by absorption—that is to say, until the long-continued chronic inflammatory process has caused a true tissue change. But just when this time can be said to have been reached, is a very difficult point to decide. He makes it a rule that no such gland be removed until it has remained unchanged for twelve months. He emphasizes *unchanged*, for if during that time it has gone partially down, then enlarged again, he considers that there is still chance for absorption.

Excision of cervical glands is not a satisfactory operation. If only a few glands are to be removed at the time, others are liable to enlarge and call for one or more future operations; and if a whole chain, both superficial and deep, is involved, the removal is no slight matter, either at the time or afterwards.

In conclusion, there is left to be considered a very frequent result of cervical adenitis, namely, cervical abscess. Having already written twice at some length regarding the treatment of cervical abscess, with reference to the avoidance of scar, the writer only briefly recapitulates what he has published in previous articles.

Since his last report, made in May, 1895, in which he gave a table of thirteen cases, he has added to the list numerous other cases that he has treated; but as the results have been, with one exception, uniformly good, and similar in every way to the results already recorded, he adds no further notes. Out of some forty cases treated, he has had but two scarred necks. The almost invariable rule is either no scar, or a mark so slight as to be merely a blemish.

He has named his method the cannula treatment, and it is simple and satisfactory. His results are obtained by using a little self-retaining drainage cannula. The skin-cut is barely three-eighths of an inch in length, just long enough to admit the cannula, which upon being inserted is pushed in until its joint is reached; it is then reversed by closing its outer arms, when it is retained within the cavity, dilating the tissues in the vicinity of the cut and giving good drainage

through a minimum cut. It should be left in place from twenty-four to seventy-two hours, but usually two days are sufficient. The shorter the time it is left in, the better the result; and it is wiser to err in removing it too soon than to leave it in too long, for it can be reinserted easily at any time should further drainage be needed.

Syringing and curetting are not needed. Nothing should enter the abscess except the knife which opens it and the cannula which drains it. In the average case, healing follows in from five to seven days; but if the gland is only partially destroyed when pus is evident, the case may take many weeks. In these cases a persistent sinus is left, calling for treatment. It is here that injections and curetting are called for. He dilates these sinuses with olive-pointed bougies, scrapes with a small curette, and injects with any one of the various stimulating or irritating solutions, according to the apparent condition of the lining wall of the sinus. These cases are extremely tedious, but the final result is good.

MASSAGE MOVEMENTS AND BANDAGING IN THE TREATMENT OF DISPLACED SEMILUNAR CARTILAGES.

DOUGLAS GRAHAM, of Boston (*American Journal of the Medical Sciences*, November, 1896), quoting Allingham, states that the semilunar cartilages may slip forward, backward, inward, or outward. The internal semilunar cartilage is the one most often at fault.

As to the symptoms in general: The knee is usually semiflexed and cannot be extended; but flexion is usually free in recent cases. The foot is turned outward when the internal similunar cartilage is displaced; inward when the external semilunar cartilage is displaced. In most cases little or nothing abnormal can be felt about the joint, except the position of semiflexion and a little tenderness at the head of the tibia. Rarely can the cartilage be felt projecting, and, even when it does, synovitis may supervene in a few hours and mask the symptoms.

As to the causes: Though any violent accident may produce internal derangement of the knee-joint, yet most cases would probably coincide with Dr. Knott's instructive description of his own case: "It has always been the result of a very slight, and in every instance an indirect, violence. This violence has always been applied so as to produce a twist at the knee, either of the leg outward or of the femur inward. The most common cause has been striking the inside of the great toe against something when the knee has been slightly flexed, the parts about the joint as relaxed as possible, and the muscles thrown off their guard." He never suffered any derangement when the limb was in a decided state of active motion.

Scott Lang points out that the internal semilunar cartilage is displaced in rotation of the leg outward combined with flexion; the external semilunar cartilage in rotation of the leg inward combined with flexion; and that the injury is caused by some sudden and almost involuntary movement when the muscles governing the joint are off their guard or fail to act in concert with one another. A lax condition of the ligaments and muscles of the knee-joint from general debility or previous synovitis would predispose to these accidents.

Laying aside cases that require surgical interference by cutting into the joint, the indications for treatment are very clear. Restore the cartilage to its natural position, if possible. Retain it there. Strengthen the joint and muscles so that they will be less likely to be caught off guard.

Various suggestions are made as to the methods to be pursued to replace the semilunar cartilage. When one fails, another is tried. A method that seems to be much relied upon is: Flex the leg as much as possible upon the thigh, then rotate the tibia inward if the inner cartilage is displaced, outward if the outer one is displaced, and extend the leg quickly upon the thigh while pressing with the thumb where the cartilage is supposed to be out of place. The opposite procedure—extension, then flexion with pressure—sometimes succeeds. As it may be very difficult to ascertain whether a cartilage has slipped out of place or not, Dr. Samuel J. Mixter has made the very shrewd suggestion that every case of sprain or twist of the knee should be put through the movements of replacing a dislocated meniscus. But if a semilunar cartilage is not displaced, it is very evident that such a procedure would hurt the patient unnecessarily and be very likely to aggravate a sprain of this joint, or even cause a displacement of the cartilage in a sprained knee.

With regard to the second indication, it does not appear that a ham-splint or a plaster cast is so direct and effectual in retaining a

semilunar cartilage and supporting and comforting the knee, as a pad with a snug bandage over the offending region. Moreover, there would seem in some cases, at least, to be a tendency of these cartilages to slip back into place even when attempts to readjust them had failed; but if the joint is immovably fixed by a ham-splint or plaster cast, its power to adapt itself to a return of the cartilage by gentle change of motion is prevented, which is not the case with a pad and bandage. For the relief of the heat, pain, and swelling that result from a sprain, wrench, or twist, massage properly applied is most satisfactory, while for the preservation of the circulation, nutrition of the muscles, and prevention of atrophy, it has proved quite effectual when applied early.

As displacements of the semilunar cartilages are most likely to occur when the muscles are off guard, so to speak, our endeavor should be to strengthen these muscles so that they will not be "caught napping." The behavior of the muscles in this manner is due in great measure to a loss of "muscular sense," the restoration of which is promoted in an astonishingly agreeable manner by means of massage, which at the same time helps to bring back the automatic action of will and spinal cord in presiding over these lazy sentinels. And this will be still further aided by alternating massage with carefully graduated movements of pushing and pulling, and of voluntary efforts at holding the leg extended. A few minutes' application of the faradic current to the quadriceps extensor muscles immediately after the massage sometimes seems to have a more invigorating effect than either alone, and, moreover, the contractions caused by the faradic current are but another and useful form of motion—semi-active, semi-passive.

Walking with the foot turned inward is considered to be a good precautionary measure when the internal semilunar cartilage is liable to slip out of place, with the foot turned out when the external cartilage is likely to slip, according to Scott Lang; but as either of these positions allows all the more latitude for rotation in the opposite direction when the knee is semiflexed, it can only be safe so long as the patient receives no violence to throw the leg in the opposite direction; whereas, if the patient walks with the foot turned out and the knee extended, where it is a question of preventing dislocation of the internal semilunar cartilage, then, as the knee is already in the position where the cartilage is liable to be displaced, but with the muscles on guard, unexpected violence is resisted, and the range of dangerous motion is reduced to a minimum.

In cases that have required operation for the removal of the semilunar cartilage, or for stitching them in place, the joint is generally stiff for two or three weeks after the operation. Dr. Allingham recommends daily massage and passive motion, and later, that the patient try to sit on his heels. A much safer plan than the latter is for the patient to hold on to something, such as the mantelshelf or the foot of a bed, so as to graduate and control the weight upon the knee.

Neither in their natural or their unnatural positions can semilunar cartilages often be distinguished from the surrounding tissues.

In cases requiring surgical operation, the treatment above indicated may be safely tried in some instances before cutting into the knee-joint, but more especially after operation for restoring motion and strength to the knee.

A NEW METHOD OF RADICAL CURE OF INGUINAL HERNIA WITHOUT SUNKEN THREADS.

An article in the *Semaine Médicale* of November 11, signed by Professors DUPLAY and CAZIN, illustrates a way in which the hernial sac may be tied without threads, which frequently produce trouble later. The sac is first opened and explored with the fingers, all adhesions detached, and a portion of the omentum resected if necessary. The sac is then completely dissected, and an assistant draws out the base with a pair of forceps as far and as long as possible, with that portion of the peritoneum normally situated two to three centimeters above the internal inguinal ring. The operator then seizes the end with another pair of forceps and draws it around and through to make a knot, as high up as possible; the ends remaining above the knot are then split and one end is drawn around and through in the same way, to make another knot, or passed through a slit in the other half, and this is repeated as often as the length of the sac will allow. In one case the sac was so short that it was split in four pieces and the four ends tied in knots, two by two. A strong fastening is thus made without the introduction of any foreign substance, remarkably simple and perfect in its results. When the traction ceases it sinks out of sight immediately, as in the classic operation. It was always found that the

highest part of the knot remained two or three centimeters above the internal inguinal ring. The operation is completed in the usual manner. If the sac is too thick to be tied in this way, it can be split and knots made in each half separately.—*Journal of the American Medical Association*, Dec. 26, 1896.

REMOVAL OF TUMOR OF THE MESENTERY. RESECTION OF FORTY-FOUR INCHES OF INTESTINES, END-TO-END ANASTOMOSIS WITH MURPHY BUTTON.

G. W. MASTON, in *The Medical Brief*, relates the case of a male, forty-nine years of age, who had noticed an enlargement in his abdomen for over three years, which had caused considerable discomfort. The tumor was movable, and a diagnosis of solid tumor of the mesentery, probably malignant abdominal, was made. The intestines were intimately attached to the growth.

Operation was decided upon. The tumor was hard, six inches in diameter at the widest point, two inches at the narrowest, and about two inches thick; it proved to be a spindle-cell sarcoma. Anastomosis was performed with a large-sized button, the upper end being put on a stretch when the button was *in situ*. The operation occupied one hour and left the patient with a good pulse. Following the operation liquid food only was given for twenty days.

Considerable lancinating pain in the abdomen was complained of, and four months after the operation much borborygmus was felt; the stools were thin and ashen-hued. The patient died in great pain five months after the operation.

Post-mortem disclosed the intestine united for about three-fourths of its circumference, with an ununited portion at the mesenteric border; the button had lodged about six inches below the point of approximation, and produced perforation. There was no contraction of the gut at the point of union.

A NEW METHOD OF TREATING STRICTURE OF THE RECTUM.

BACON, in *Mathews' Medical Quarterly*, proposes the method given below in strictures of the rectum. In January, 1895, this author published a method for stricture which consisted of a plastic operation, using the sigmoid flexure to form a new channel around the strictured portion of the canal, and claimed it was a sure means of relieving all non-malignant strictures of the rectum located above the levator ani muscle; but for that class of strictures located just above the internal sphincter ani, no plastic operation can be done that will give fecal continence afterward. These strictures have been unsuccessfully treated for ages by various methods, such as gradual dilatation with bougies, forcible divulsion, internal and complete proctotomy, and later by means of electrolysis; they cannot be dissected out and the ends of the bowel united without leaving a circular cicatrix that will reform another stricture of the gut.

Complete proctotomy gives temporary relief by severing the stricture band, but the wound soon fills up with granulation tissue that reforms fibrous tissue, and the stricture is worse than before operation was done. Then, again, in making the complete proctotomy the sphincter muscles are severed, and often do not unite perfectly, and incontinence results. Bacon has successfully tried his present method and found that it does not interfere with the sphincter muscles, yet accomplishes permanently what complete proctotomy only does temporarily. The wound made by a complete proctotomy—that is, when an incision is made, beginning with the rectum and cutting through the stricture band back to the coccyx and sphincter muscles—is the shape of a letter V after the ends of the stricture retract.

If we can prevent this triangle from filling up with fibrous tissue, the severed stricture band must disappear by absorption. In order to accomplish this the author produces a mucous fistula between the stricture and the coccyx, so that after the proctotomy is made the mucous tract will be at the bottom of the wound and prevent the union of the severed stricture bands.

The operation is simple and quickly done, and practically free from danger. The patient having been thoroughly anesthetized, the operator takes a blunt-pointed aneurismal needle, threaded with a very heavy silk ligature, and at a point just above the internal sphincter on the posterior rectal wall in the median line punctures the gut and carries the needle point well back into the perirectal tissue to the coccyx, and up behind the stricture above the upper limit, when the needle is forced through the rectal wall into the rectum. The ligature is now seized with a blunt hook or dressing forceps, and one end drawn down through the stricture opening, and the

needle withdrawn. The two ends of the seton are now securely tied, and left hanging outside the anus. The loop of thread is left long so as to avoid severing the stricture, as it is necessary to have the seton in place for about three months to get a continuous mucous tract. There is practically no pain following the operation if the thread is tied outside of the anus and a loose loop left. Out of eighteen cases there has been no infection from the ligature or abscess, as the drainage is complete. At the end of three months the patient is again anesthetized and the seton withdrawn; a grooved director is passed through the fistulous tract behind the stricture, and the intervening stricture band severed with a Paquelin cautery. The patient is kept in bed one week after the seton is inserted, and again one week when the stricture is divided. For two weeks after each operation the bowel is irrigated daily with solution of boracic acid.

The writer reports three failures, which he believes due to not taking in more tissue above and below the stricture band, so as to catch all the scar tissue above and below the real constriction.

THE BETTER OPERATION FOR HEMORRHOIDS.

VAUX (*The Canadian Practitioner*, December, 1896), Resident Assistant of Mt. Sinai Hospital, New York, describes the routine treatment in that institution as follows:

On admission the patient is given a bath, and if hemorrhoids are strangulated an ice-bag is applied to anus; should they be merely smarting and inflamed, a wet Thiersch dressing is applied. The night preceding operation the patient is given a half-ounce of compound licorice powder, and at 5 A.M. a high enema, followed by a low one at 7 A.M.; if necessary these are repeated, the test being that the fluid comes away absolutely clear. No food is given on the day of operation. The perineum is shaved in the ward, but the scrubbing up of the patient is in the operating room. When the patient is anesthetized, the first assistant dilates the sphincter and thoroughly cleans the rectum with soap and water, by means of a sponge and holder, and then it is irrigated; the perineum and thigh are scrubbed with soap and water, followed by ether and bichloride of mercury; wet bichloride towels are laid over the pubes and around the field of operation. Absolute antiseptic precautions are observed, the preparation of hands being the usual form for operations, and all instruments most carefully sterilized. There is no room in Mt. Sinai for the idea that the rectum is dirty, and therefore hands and instruments may be dirty too; as a consequence, sloughing or pyemia is almost unknown. A good-sized sponge with string attached is wrung out of bichloride and introduced high into the rectum, and the assistant, grasping the string, makes sufficient traction to protrude the internal piles.

The technique of the operation may be summarized under three headings:

1. Apply the clamp in the long axis of the hemorrhoid so that the scar may be a radiating one, and thus avoid any chance of cicatricial stenosis.

2. Dip the distal end of the clamp well down, so as to include the mucous membrane of the hemorrhoid in its entire length, though only clamping off about one-third of its substance. Be sure that no skin is included, otherwise the subsequent edema will be very great and time of recovery lengthened.

3. Sear the hemorrhoid slowly from above downward, layer by layer, the cautery being only at a dull red heat; by observing these precautions any subsequent hemorrhage is avoided.

4. Insert a tampon cannula as described below, which must not be removed till expelled by the first stool.

When the anesthesia wears off the pain will be intense, and opiates must be given. At 5 A.M. on the morning of the third day a half-ounce of magnesium sulphate is given, and at 7 A.M. an oil enema is administered through the tampon cannula; this is important, as it saves much pain when the tampon is expelled. The enema being expelled brings the cannula with it, and the first stool is comparatively painless. On each succeeding morning a half-ounce of magnesium sulphate is given, and on the fifth day the edema will have disappeared in great part, and by the eighth day patient is ready to go. No dressing save a piece of iodoform gauze and a T-binder is used. In a ligature operation the bowels are moved on the fourth day, and in a Whitehead on the fifth.

The tampon cannula mentioned above is made by taking a piece of half-inch rubber tubing, sterilizing it, and wrapping around it several layers of iodoform gauze; it is then anointed with sterilized vaselin, and after the operation, is inserted in the rectum. The tampon cannula serves a double purpose: it

allows the escape of secretions and flatus, so that all danger of retained hemorrhage is avoided; and also allows the primary enemas to be given without much pain.

In conclusion, he reviews the advantages of the clamp and cautery: It is antiseptic; not only can the clamp be readily sterilized, but the cautery itself is the most powerful germicide; there are no sloughs to separate as in the ligature operation; there are no ligatures or sutures to offer any chance for infection; it is a radical cure; the operation is a rapid one; the time of convalescence can be definitely fixed—the eighth day. The operation, which was formerly but little employed, is now in high favor in the New York hospitals. The record of hemorrhage, pyemia, or death is almost negative. In five hundred cases operated upon in Mt. Sinai, by the above method, there has not been a single death. One case of pyemia from which the patient recovered is recorded, and a few slight hemorrhages; and, so far as can be ascertained, there have been no recurrences.

PREVENTION OF FOLLICULAR TONSILLITIS.

MAXSON (*Journal of Practical Medicine*, December, 1896) states that prevention of follicular tonsillitis is desirable in at least two classes of cases: those occurring during an epidemic, and those where there are repeated attacks occurring from once a month to once a year. Those occurring only during an epidemic can be prevented by a mild antiseptic throat wash, with or without the internal administration of benzoate of soda. The chronic cases, which are subject to frequent and repeated attacks, are very annoying to the physician and damaging to the patient's health. Such has been his experience until he applied a treatment that he has lately found, known and used by others, but which is not mentioned in any literature that he has access to. The treatment consists in destroying the contents of each follicle that is diseased in both tonsils. He does not think that the follicles themselves, but only the colonies of germs that make an abiding place therein, are destroyed.

It is the writer's custom to take a doubled piece of silver wire, such as is used for sutures, and solder its free ends to a large wire; then dip the doubled silver loop into melted nitrate of silver, so as to make a small bead on its end, after withdrawing it from the melted silver salt. The silver wire is then bent half an inch from its distal end, so as to make an angle of forty-five degrees. This bead of caustic is inserted into each follicle to its bottom; the depth will vary from one-fourth to one-half an inch. One caustic bead will usually treat from one to two follicles. By means of several beads all the follicles may be treated. This treatment is undertaken at any time except when the tonsils are acutely inflamed. It requires one or two treatments effectually to prevent its return. He has used this treatment for eight or ten years, and found it entirely reliable, and knows of no case that has not been given a very complete immunity even when subject to attacks every two to eight weeks before the treatment.

EUCAINE HYDROCHLORATE AS A LOCAL ANESTHETIC.

G. W. SPENCER, in the *Medical and Surgical Reporter* of November 28, 1896, presents further evidence in regard to the action of eucaine as an anesthetic. He believes it is a valuable addition to our resources; it is rapid in action, safe, produces positive and prolonged anesthesia, causes no serious after-effects, and can be rendered aseptic by boiling; it is the best local anesthetic before the profession.

In the nose, throat, and eyes, eucaine has given great satisfaction, and operations upon these parts can be performed without a particle of pain. In operating upon these regions solutions similar in strength to those of cocaine may be employed, but we use a much greater amount of solution of eucaine than of solution of cocaine. There is not much difference as regards the rapidity, intensity and duration of the anesthesia caused by each of these agents. The greatest difference between cocaine and eucaine is that eucaine can be administered in large doses without danger, while corresponding doses of cocaine would put the patient in deadly peril. Cocaine in the hands of not a few, given in very small doses, has caused marked symptoms of poisoning.

Dr. Spencer then details twenty-four cases in which eucaine was employed. The technique consisted in making an incision over the median line and in the long axis of the trachea. This incision extended from the upper border of the cricoid cartilage, downward for two inches; it divided the skin and superficial fascia. The anterior layer of the cervical fascia was then incised, and the

sterno-thyroid and the sterno-hyoid muscles were separated. In each case the isthmus of the thyroid gland extended well up on the trachea, and it was found necessary to incise the fascia which invested it in order to expose the trachea. The said fascia was incised by a transverse incision at the upper border of the cricoid cartilage, and this allowed the isthmus to be lifted and pushed downward. In each case three rings were incised and a tracheotomy tube was inserted. The operation in each case lasted about twenty minutes, and anesthesia was complete throughout.

An analysis of the twenty-four cases mentioned will probably convince the reader that in eucaine we have an agent which is safe and reliable. Three cases are considered major operations, and while ten were not so considered, they were such as ordinarily require the use of a systemic anesthetic to permit of operation. The operation in four cases was greatly facilitated by using a drug that induced anesthesia, but which allowed the trachea to be controlled by the patient. With anesthesia by eucaine these patients are conscious and can keep the trachea still during critical stages of the operation; in anesthesia from a systemic anesthetic, mucus accumulates in the lungs and stomach, and efforts at expulsion keep the trachea constantly in motion, which movement greatly interferes with the operation. Chloroform and ether irritate the lungs and predispose the patient to acute bronchitis and pneumonia. Tracheotomy itself is a predisposing factor in pneumonia.

Taking these facts into consideration, it is well to select an agent to allow of a painless operation, which will not affect the respiratory organs injuriously while operating in their locality. No pulmonary symptoms followed the use of eucaine in any of the above cases. One case had mitral regurgitation; two drachms of a five-per-cent. solution had no effect on the circulation. Another case had an irritable heart, and she was very nervous; two drachms of a five-per-cent. solution acted as a sedative to her condition.

One case had a pint of pus in the left pleural cavity; this naturally deprived the heart of a portion of its space. Two drachms of a five-per-cent. solution had no effect on the circulation or respiration. The average duration of anesthesia from eucaine is about twenty minutes; the time to wait for complete anesthesia is five miuutes. Two drachms of a five-per-cent solution used hypodermically will in the majority of cases be sufficient to induce anesthesia; but larger amounts can be employed if necessary. The number of sutures used in the operations were ninety-three. After using and seeing sutures employed in so many cases, the author does not agree with the assertion made by Fuller that eucaine exerts a hardening action on the tissues.

HYSTERECTOMY BY COMBINED ABDOMINAL AND VAGINAL OPERATION.

PENROSE (*American Journal of Obstetrics*, December, 1896) states that for the past year he has been performing complete hysterectomy for cancer by a combined method of operation through the abdomen and vagina. In the combined operation as usually performed, the vaginal part of the operation is done first, the abdominal part last.

In the method of operating which he followed he has begun through the abdomen and finished the operation by way of the vagina. This method seems to present several distinct advantages. The following is the technique: The abdomen is first opened; the ovarian arteries and the round ligaments are secured by ligatures; the broad ligament is divided down to the level of the internal os, and the bladder is dissected from the anterior face of the uterus and the upper portion of the vagina; a small gauze pad is then inserted in the space between the bladder and the upper portion of the anterior vaginal wall; a similar pad is inserted at the bottom of Douglas' pouch, immediately behind the upper portion of the posterior vaginal wall; the abdominal incision is then closed; the woman is placed in the dorsosacral position; the cervix is exposed through the Sims speculum; the posterior vaginal fornix and the anterior vaginal fornix are opened by incisions made directly over the gauze pads—the incision may be made boldly and quickly, because the pads prevent intestinal injury; the vaginal mucous membrane is then divided on the sides of the cervix, and the bases of the broad ligaments are secured with large forceps; the uterus is then cut away, and removed through the vagina; the gauze pads are withdrawn and the vagina is packed with gauze.

The advantages which this method of combined operation possesses over the operation which is usually performed, of entering the vagina first and finishing through the abdomen, are the following: The dirty part of the operation is done last; the septic cervix is

withdrawn through the vagina and not through the peritoneal cavity; the vaginal part of the operation is facilitated by the preliminary separation of adhesions in the upper part of the pelvis, by the division of the upper portions of the broad ligaments, and by the dissection of the bladder from the uterus, this operation being easier from above than by way of the vagina.

The operation seems also to possess some points of advantage over the operation of complete hysterectomy from above as it is usually performed to-day. In complete hysterectomy the vaginal vault is either closed by suture after the uterus has been removed, or, more usually, the safer method is followed of leaving the vaginal vault open and draining by gauze through the vagina. If the latter method is employed there is usually infection of the ligatures which secure the uterine arteries, with resulting persisting sinuses. This difficulty is, of course, avoided by the use of catgut ligatures.

Again, when the vaginal vault is opened from above the operator cannot determine with certainty that the incision is made outside of all infiltrated tissue, and in case of cancer of the cervix it is frequently necessary to excise a portion of the vagina after the uterus has been cut away. This is contrary to the sound surgical advice, to remove cancerous tissue in one mass when possible.

INGUINAL ORCHEOTOMY: A NEW METHOD.

The Lancet of December 12, 1896, contains a paper by HANDLEY in which he advocates the following procedures:

He prefaces the description of his method by the statement that standard books on operative surgery recommend an incision extending from a point just below the external ring to the bottom of the scrotum; the object of this long incision is to ensure free drainage of the abundant cellular tissue of the scrotum, in which hemorrhage is so likely to occur. It must be admitted that a collection of disintegrating blood-clots in this region may be a source of intense septic poisoning. It can be shown, however, that this long scrotal incision produces those very evils which it is designed to prevent. In the first place, it gratuitously involves cutting through a large extent of the vascular subcutaneous tissue of the scrotum, and thus directly conduces to hemorrhage after the operation, with its accompanying evils. Having produced the hemorrhage, the incision provides a ready entrance for septic organisms; this is partly due to the contractility of the scrotal skin, which makes accurate apposition of the edges an impossibility, partly to the difficulty of keeping a dressing securely applied to the scrotum, and partly to the septic character of the surrounding region of the skin. Moreover, any urine which escapes will drain downwards into the wound. It will be seen that the conditions for the production of suppuration are almost ideal, and, indeed, the after-progress of castration wounds is at present notoriously unsatisfactory.

The method Handley advocates—which he terms the inguinal, as distinguished from the present or scrotal method—avoids all these evils; it is based on the principle that all interference with the scrotal tissues during the operation is dangerous and unnecessary. An incision of from one inch to one and a half inches long, and slightly curved, with its concavity looking downwards and outwards, is made over the external abdominal ring in the line of the spermatic cord. The cord is exposed and isolated; it is then seized with the fingers of the left hand and pulled gently upwards. With a blunt dissector the subcutaneous tissue is freed, first from the lower part of the cord, and then from the testicle as it appears in the wound, the left hand keeping up gentle traction on the cord while this is being done. The testicle is delivered through the small incision and the cord dealt with in the usual manner. Afterwards the scrotum is invaginated through the wounds in order to inspect the bed of the testicle for bleeding points, which in the two cases he has operated on were conspicuous by their absence. The incision is then closed by a continuous horsehair suture.

This method has many advantages over the scrotal method of castration. The short incision passes through the firm cellular tissue over the external ring, and the testicle is shelled out without any disturbance of the loose vascular tissue of the scrotum. The slightness of the vascular connection between the testicle and its bed is shown by the frequency with which it appears in the wound during the operation for the cure of inguinal hernia; hence the risk of hemorrhage into the tissues after castration is done away with. Owing to the absence of dartos the edges of the incision can be accurately brought together, and in forty-eight hours the risk of infection from without is past.

The delayed union so common in scrotal incisions is avoided. It may be well to include the scrotum in the dressing, pulling it upwards and forwards; should it, however, slip down on the perineum, the incision will still be well covered by the dressing. If it is thought preferable a sealed dressing may be applied immediately after the operation. Any sealed dressing applied to the scrotum itself would certainly become loosened by the dartos within a few hours, but on the smooth skin over the external ring it may be relied on to keep firm and close. Should any dribbling of urine occur, the incision is well above the end of the penis instead of being immediately underneath it, and is thus much less likely to get wet. Finally, though this point is unimportant, the time of the operation is shortened, because there is less trouble with bleeding, and the incision can be more quickly sewn up. In the two cases on which, by the kindness of Mr. R. Clement Lucas, he has had the opportunity of trying this method, healing took place by primary union without rise of temperature or other complication. The long scrotal incision appears to be a relic of the time when surgeons recognized that their wounds must of necessity become foul cesspools, to be drained and cleared out on ordinary sanitary principles. A scrotal incision is only necessary when the testicle is much enlarged, or adherent to the skin.

CLEANSING AND CLEANLINESS IN ABDOMINAL SURGICAL OPERATIONS.

Lawson Tait (*Medical Record*, Dec. 19, 1896), in an interesting paper on the above subject, gives the following directions: First of all, if an operation such as the removal of an ovarian tumor has been conducted so well and so fortunately that nothing has entered the peritoneal cavity, the wound ought to be closed at once without sponge or anything else entering it. If, on the contrary, a mess has been made inside, it must be cleaned out; and the question is to decide on the best method, and the weight of argument should always be against the use of sponges—they are so inherently dangerous. Yet their use is often essential; thus, in separating adhesions of the omentum to a tumor nothing displays the ability and dexterity of a surgeon so much as the rapid folding up of a dry sponge in the damaged apron; or, if the adhesion of the appendages to the pelvic wall bleed freely, the pelvis must be packed, and the packing will probably remove much dirt with it. Until two years ago the author always used sponges for this purpose, and would often have six or eight sponges squeezed tight down in the pelvis; now he uses iodoform gauze for this purpose. Who it was who led us to make this important advance he does not know; but it is one of real value, for iodoform gauze stops oozing from parietal and visceral surfaces in a way that nothing else will do, save perchloride of iron. If, however, a ligature has cut through a rotten parietal, or a vessel has escaped the forceps and ligature and cannot be found, washing out with a stream of clean water will speedily display the source of the bleeding and enable the vessel to be secured. He does not combine the two processes if he can help it, for they do not generally aid one another.

As Tait believes that pus is a substance already dead and generally decomposing, he takes the utmost care to cleanse it all away, or anything which from his view more or less imitates it, such as loose blood-clot and blood in solution. The method to be employed in this case is the continuous stream; the best way to serve this purpose is simply to reverse a stream of common tepid water through one of his ovariotomy trocars, and he uses a large one if he wishes to dislodge and wash out loose clots by means of a large volume of water issuing from a large tube; or, on the other hand, if he wants to wash carefully every inch of the peritoneal surface, he uses a small tube with a gently flowing stream. If the tubes are not handy—and in our worst emergencies, like ruptural pregnancy, they may not be—a very efficient substitute is to open the wound as widely as possible, pull up the parietals, and pour in with cautious violence one or more jugfuls of tepid water, insert the right hand into the abdomen, and with the left close the wound round the wrist as closely as possible. The process of washing may then be carried out as fully as is considered desirable. If a tube of the Tait pattern can be obtained, it is better to use it, for it can be carried into every one of the complex interstices of the peritoneum, and the washing be thereby made most thoroughly; but the inexperienced operator should be cautioned against using a double tube for entrance and exit, as has recently been recommended. This is no new proposal, and when such is used the stream does not get spread but returns at once, short-circuited, as the electricians say, and without doing much cleansing. Care must be used to have the temperature of the water not lower than 100°

F., and not higher than 103° F., and it must be borne in mind that few women, and none of the nurse type, have any sense of temperature in their hands. To them, "blood heat" may be anything between 75° and 120° F.

The further or secondary cleansing of the peritoneum is secured by the use of the drainage tube, to be considered at length in another chapter.

SOME AFFECTIONS OF THE FEMALE BLADDER.

GARCEAU (*Boston Medical and Surgical Journal*, Sept. 10, 1896), in an instructive discussion of this subject, sums up as follows: Out of the forty-three cases, thirty-three, or seventy-six per cent., had had previous bladder trouble. This shows the frequency of vesical irritation in pelvic diseases. Of the ten cases in which there was no previous bladder trouble, the catheter was required in four; no irritation followed. Of the thirty-three cases, in twenty-four the catheter was used. Looking at the twenty-two cases in which no trouble followed operation, we find ten in which the catheter was used. This is certainly evidence that the catheter does not cause irritation. Looking now at the other twenty-one cases, we find the catheter was used in fourteen; they were either better or no worse of their irritation after operation, with the exception of six, and these six all suffered severely from bladder irritability before operation. It seems to be a fair conclusion, therefore, that the catheter, when properly used, has no effect in causing vesical disturbance, and that it will be found that those who have vesical irritability after operation had it before. It is not argued that the catheter does not cause infection when improperly used; in three cases out of the forty-three a distinct history of infection was obtained, dating in all three from retention of urine after confinement, the catheter being used.

The treatment of cases of vesical hyperemia is very unsatisfactory at times. Attention to the general health is of paramount importance. Digestion should be attended to, and, above all, the bowels should be kept freely moving in order to relieve the pelvic congestion as much as possible. It is needless to say that any coexisting pelvic disease should receive appropriate treatment. Local applications of nitrate of silver, and in some instances of glycerite of tannin and ichthyol, have been distinctly beneficial. Great relief will be given by the use of the fine coil of the faradic current; here the bipolar vaginal electrode may be used, or one electrode may be placed over the bladder on the abdomen and the other in the vagina. In one patient this treatment was always followed by a good night's rest. If the urine is abnormal, this should be corrected. The various diuretics and vesical sedatives have been tried, but the results have not been remarkable.

Finally, if the patient continues to suffer, absolute rest in bed, with mild, unstimulating diet, must be insisted upon. This measure will nearly always be productive of good results. If it fails and the trouble continues, the question of artificial vesico-vaginal fistula is presented for consideration. The immediate relief given by this measure is most grateful to the patient; the very night of the operation she sleeps soundly, and wakes up refreshed in the morning. The urine drains away through the vagina, and gives a much-needed rest to the irritable sphincter. The woman quickly recovers her lost nervous tone, is more placid and peaceful, and is not harassed by the continual desire to urinate which made life a perpetual torment. The fistula must be left open a sufficiently long time—in cases of cystitis, until the pyuria has entirely disappeared. Another point to be emphasized is that the fistula must be made close to the sphincter; for if made high up near the cervix the urine will pocket below it, and so the operation fail because the irritation is kept up as before, the drainage being imperfect.

Pregnancy need not be considered a contraindication to this operation; on the contrary, the occurrence of pregnancy may so intensify the symptoms from the increased hyperemia as to render the operation imperative. This was so in one case of cystitis, in which a vesico-vaginal fistula was made. The patient's sufferings were intense, and she insisted upon having relief. The operation was entirely successful, and the pregnancy (three months) was not disturbed.

In conclusion, a word may be said about the method of making examinations of the bladder. The most comfortable position for the patient is the dorsal; the examiner also will find it easier to work with the woman in this position. In the knee-chest position the ureteral orifices are more prominent, but if the examiner is near-sighted he will find it rather difficult to get close enough to examine properly, on account of the cramped position he is obliged to assume. If ether be given,

the dorsal position will be chosen for obvious reasons. Ordinary daylight, with or without sun, gives ample illumination; the table should be placed close to a window, however, in order to have the light as strong as possible. If artificial light be chosen, a good strong gas-light must be used—preferably an Argand burner; the greatest care must be exercised not to burn the skin in case ether is used—this is an accident that easily happens, and the burns are most annoying and may be very serious. If the ureter is to be catheterized, the best place for the light, if gas, is at the side of the woman which corresponds to the ureter to be examined, and not on the abdomen. The examiner stands not in front of the woman, but on the side opposite to the light; if he examines the left ureter, the light is on the woman's left side and he stands on her right. This brings the ureteral opening directly in line with the light and the examiner's eye, and avoids cramped positions; the illumination is much better, as the light is reflected directly and not at an angle. For this idea I am indebted to Dr. Edward Reynolds, who was the first to suggest it. The examination is made much easier by means of it.

Reviews.

THE PRINCIPLES OF THEORETICAL CHEMISTRY. With Special Reference to the Constitution of Chemical Compounds. By Ira Remsen. Fifth Edition, thoroughly revised.
New York and Philadelphia: Lea Bros. & Co., 1896.

The fact that Professor Remsen is one of the leading chemical authorities of the United States, renders anything which he may publish worthy of purchase by those who are interested in chemistry. This little manual is the clearest exposition that we know of which deals with chemical constitution, and it is fortunate for American students that they have placed in their hands such a lucid description of what to some persons proves a difficult subject of study.

DISEASES OF THE STOMACH. A Text-book for Practitioners and Students. By Max Einhorn, M.D.
New York: William Wood & Co., 1896.

Within the last few years the study of diseases of the stomach upon a rational and scientific basis has made extraordinary advances, chiefly through the work of German clinicians; although American and French investigators have followed not far behind their distinguished Teutonic leaders. Of these, perhaps the first are Ewald in Germany and Einhorn in America. The numerous original contributions which Einhorn has made to this subject render him quite equal to the task of compiling the volume of nearly five hundred pages which we now review.

The book is copiously illustrated, describes all the more recent tests and methods of examining the stomach and its contents, and almost every page has its statements fortified by copious bibliographical references. The author is also careful to give full credit to American investigators in this field, and speaks in terms of high praise of the work of Dr. D. D. Stewart, of Philadelphia, whose name is already familiar to the readers of the THERAPEUTIC GAZETTE.

We bespeak for Dr. Einhorn's little manual the enthusiastic reception which it deserves.

ARTIFICIAL ANESTHESIA. A Manual of Anesthetic Agents. By Lawrence Turnbull, M.D., Ph.G. Fourth Edition, revised and enlarged. Illustrated.
Philadelphia: P. Blakiston, Son & Co., 1896.

In the preface to this fourth edition of Dr. Turnbull's well known book he tells us that he examined all the important works published since the third edition appeared, and many of the forms of apparatus which have been modified or recently introduced. He has also taken pains while abroad to study the methods of administering chloroform in Scotland. The result of this renewed study is to confirm him in the belief that ether is by long odds a safer anesthetic than chloroform, and he expresses regret that Wood, Da Costa and Carter have attempted to show that ether is more dangerous than we have heretofore thought it.

The book contains a large amount of useful and valuable information.

PTOMAINES, LEUCOMAINES, TOXINES AND ANTITOXINES: OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. By Victor C. Vaughan, M.D., Ph.D., and Frederick G. Novy, B.Sc., M.D. Third Edition, revised and enlarged.
Philadelphia and New York: Lea Brothers & Co., 1896.

Those who are familiar with the earlier editions of this book will note that the authors have made a distinct addition and innovation in discussing, besides the ptomaines and leucomaines, the even more interesting subject of toxins and antitoxins.

The volume at the present time gives perhaps as complete a summary of what we know concerning these interesting subjects as can be found in any language, and certainly it affords the best which has appeared in the English language. Although the subject of ptomaines and leucomaines would not

at first glance seem interesting to the practitioner, the wide popularity of the earlier editions has rapidly exhausted them, and has shown that the profession in general appreciate such a summary of scientific progress and record of original work.

THE DISEASES OF THE MALE URETHRA. By R. W. Stewart, M.D., M.R.C.S.
New York: William Wood & Co., 1896.

Many members of the medical profession—practically all who are especially interested in genito-urinary surgery—are familiar with the admirable articles which Dr. Stewart has published from time to time dealing with urethral surgery. It is with considerable pleasure that we welcome a book from the pen of this original and gifted writer.

The book opens with a chapter devoted to the anatomy of the male urethra, after which follows a discussion of Urethritis. This is classed as acute and chronic, and anterior and posterior. In regard to posterior urethritis he writes as follows:

"There is at the present time a growing tendency to the belief that acute posterior urethritis is such a common concomitant of acute anterior urethritis that it should be considered exceptional when it does not accompany the latter disease. The advocates of this theory claim that the disease is often overlooked and the frequency of its occurrence much underestimated, and also that it appears much earlier in the course of acute anterior urethritis than has generally been supposed. Statistics have been given to show that in eighty per cent. of cases of acute anterior urethritis a posterior urethritis is also present. . . . I am perfectly willing, as will be shown later, to concede the frequency of chronic posterior urethritis, but neither the experience I have had, nor the investigations I have made, warrant me in entertaining the belief that this disease is nearly as frequent a sequence of acute anterior urethritis as is indicated above. If we believe that infection of the deeper portions of the urethra takes place through the medium of the lymphatics, then we can readily conceive that the posterior urethra would rarely escape infection; but believing in neither, I must hold that acute posterior urethritis should be regarded as a complication, not as an essential part of a gonorrhea. In fact it must be considered the most serious complication liable to arise in the course of acute anterior urethritis, since it is a necessary forerunner of gonorrheal epididymitis, cystitis and pyelitis."

As to the diagnosis of acute urethritis, he states that we have settled back to the comfortable position of relying chiefly upon clinical symptoms, except when a clinical diagnosis is difficult or impossible. It is unfortunate that Stewart lends the weight of his influence to this teaching, since with the exception of a small coterie in this country it is probable that specialists the world over are relying more and more absolutely upon microscopic examination, not only for diagnosis, but as a means of directing their treatment.

The irrigation treatment is, he holds, disappointing, and injections are not advised until the period of decline of gonorrhea.

There is one paragraph with which all men of judgment and experience will heartily agree. Stewart states: "The cure of gonorrhea is often delayed by overanxiety or overactivity in its treatment, and it will often progress more favorably if permitted for a time to pursue its own course toward recovery." The section upon Stricture, though concise, is particularly clear, original and forceful, and can be commended without reservation.

A PICTORIAL ATLAS OF SKIN DISEASES AND SYPHILITIC AFFECTIONS. In Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris: with Explanatory Woodcuts and Text. Parts V and VI. By Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard, and L. Jacquet. Edited and Annotated by J. J. Pringle, M.B., F.R.C.P.
London: The Rebman Publishing Co., Ltd. Philadelphia: W. B. Saunders. 1896.

The GAZETTE has already stated its opinion of the manner in which authors and publishers have cooperated to produce an Atlas of Skin Diseases which bids fair to rival all its predecessors.

Part V contains photo-lithochromes with brief clinical descriptions of Conglomerative Tricophytic Folliculitis, Lupus Pernio, Papulo-tuberculous Syphilides, Vacciniform Infantile Ecthyma, together with a number of woodcuts.

Part VI contains photo-lithochrome plates of Ulcers and Scars in an Habitual Cocaine Consumer, Tricophylosis of the Skin, Syphilitic Hyperkeratosis, Psoriasis Figurata. The text accompanying these beautiful pictures is particularly clear.

THE SURGERY OF THE CHEST. By Stephen Paget, M.A. Oxon., F.R.C.S. Illustrated.
New York: E. B. Treat, 1897.

In this work, the only one of its kind, the author has embodied the results of the accumulative records of thoracic intervention, to-

gether with those of his own personal experience. The first chapter is devoted to Landmarks of the Chest and General Malformations. Concussion and Contusion are next considered. In regard to concussion the author has no explanation to advance for the severe or even fatal shock which sometimes follows a comparatively slight trauma of the chest. The treatment is that applicable to shock. In the chapter devoted to Fractures and Dislocations of Ribs, Costal Cartilages, and Sternum, special attention is devoted to costal fracture in the insane. Paget states that the weight of evidence seems to be against the occurrence in the ribs of the insane of any definite changes directly due to insanity. Complications of fracture and internal injuries are considered at length, including trauma of the Lungs, Blood-vessels, Pleura, and Heart. Chapters are devoted to Emphysema, Pneumothorax, Hernia of the Lung, Wounds of Intercostal and Internal Mammary Arteries, and Hemothorax. It is stated that the intercostal arteries are rarely wounded in the operation for empyema; two cases are reported. Dulac by cadaveric experiments found that this artery may be readily wounded by an incision close to the lower border of the upper rib, either in the sixth, seventh, or eighth space, alike in the anterior, lateral, or posterior part of the chest.

A number of cases of wound of the intercostal artery are quoted.

In treating wounds of the lung he quotes as applicable what Rose says of wounds in the region of the heart:

"Certainly the worst thing of all for the patient is 'thorough examination.' We have got past that bad time in surgery, when a man would not leave a fractured pelvis alone till he had made it crack, or, as he called it to pacify the patient, till he had established beyond doubt the presence of crepitation. Why should we treat cases of internal wound or injury worse than we now treat a fractured pelvis? In all such cases I avoid all repeated examinations; I make the examination with all gentleness; I never probe the wound or put my finger in it; I percuss the patient softly, do not ask him to breathe hard during auscultation, and prefer not to listen to his back, rather than set him up in bed without some special reason, or disturb by any movement the delicate half-formed adhesions, which are our chief hope of his recovery. But there are still cases where, in spite of all my warnings and orders, these rules are broken, and the excessive zeal of some of my assistants for accurate diagnosis has retarded healing and brought the patient into grave danger of death."

Cases in point follow. General Operative Treatment is briefly considered; Wounds of the Heart are dealt with at length; then follow Wounds of the Diaphragm and Diaphragmatic Hernia.

The second portion of the book is devoted to Diseases of the Chest and has to do with affections of the Bones, with Tumors, Pleural Effusions, Abscesses of the Lung, Gangrene, Phthisis, Diseases of the Bronchial Glands, and Foreign Bodies in the Air Passages. To the Surgery of the Heart is devoted a special chapter. Finally, Subphrenic Abscess and Operation through the Pleura for Hydatid Cysts of the Liver are considered.

The Appendix includes Reclus' Address upon Thoracic Surgery and Bulow's Treatment of Empyema by Continuous Syphon Drainage.

There can be no question as to the value of this book nor as to the skill with which the disseminated reports in modern surgical literature which bear upon the subject considered have been utilized in the formulation of sound conclusions. The book is one so valuable to the surgeon that he should not be without it.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., M.R.C.P., F.R.C.S.

The New Year has opened auspiciously for the profession in this country. The first news which greeted us on the 1st of January was that Sir Joseph Lister had been made a peer. This is the first time that a medical man has been given a seat in the House of Lords; we may therefore be excused for looking on it as an epoch-making occurrence in the social history of medicine. For Lord Lister himself one does not stop to even view the event as an "honor;" the government honors itself in bestowing the title. It is the whole profession which is to be congratulated on this public recognition of one of its members. At the same time one cannot quite get away from a feeling that Lord Lister's peerage has not been entirely bestowed for his professional eminence; had it been so, it should have been offered to him ten years ago; one is therefore obliged to acknowledge that it is because of his eminence as a scien-

tist and his present position as President of both the Royal Society and the British Association. Still, after all, the important and encouraging point for the whole profession is that our Upper House is no longer reserved for successful merchants, lawyers, and those who "cut, hack, tear, and shoot"—as Mr. Godkin describes the military class in this month's *Century Magazine*—but that its doors, which have been gradually opening to science, literature, and art, have now finally admitted one who has been instrumental in saving more lives than Wellington and Napoleon ever destroyed.

Even if peerages were to be more frequently offered to members of the profession, I do not think there is the least likelihood that many would be accepted so long as peers have to keep up what people are pleased to term the "certain state" which it is presumed must accompany that position. One of our journals assures us that the day of large practices is over for ever; and that there is now such a general leveling-up of the profession that even the most successful practitioner finds that "the road leads up hill all the way; yes, to the very end," and hence he is not likely to be able to accumulate the fortune necessary to pay for powdered flunkeys and other similar gewgaws. Lately, too, the papers have been suggesting the creation of a cheaper class of consultants with fees somewhat smaller than the usual tariff; this class to be recruited from younger men waiting to move up to the higher grade,—in fact, analogous to an arrangement that exists at the Bar. The idea has not been at all favorably received. Then, again, the profession continues to increase in numbers so as to be out of all proportion to the wants of the public; the inevitable consequence will be keener competition and smaller professional incomes. This excessive growth of the profession is shown by a study of the Medical Directory for 1897. From this we gather that the profession includes 958 names more than the year before, a larger increase than has ever before occurred in any previous year, except 1894. This increase is ubiquitous, but it is interesting to note the proportion of medical men to the population in different parts of the kingdom. Thus we see that London has twice as many practitioners (two in 850) as the provinces, while Edinburgh has one practitioner to 500 inhabitants, and Dublin comes next with one to 600. It has been suggested that the disproportionate increase in the number of medical men in these University towns is due to the fact that they attract many who earn their living by the teaching rather than by the practice of the profession. But I would also point out that very large numbers of medical men recently qualified, or traveling, or retired, give their address in one or other of the capitals of the three United Kingdoms, and that therefore the actual percentage of medical men is not as excessive in our large towns as these figures would lead us to suppose.

Amongst other causes which thin our receipts is the ever-increasing army of quacks. One rogue, a "cancer cure," has just been sent to prison; but this was not because he defrauded poor people by pretending to cure cancer, but because he made some statements which landed him on a charge of perjury. This worthy claimed to have studied and obtained his diploma in the Eclectic College of Philadelphia (a now suppressed diploma-mill, I understand) at a date when he was living in England as an artisan! But of course one conviction on a side issue will have little effect on the hordes of charlatans, and it is hardly to be wondered at that the struggling practitioner is clamoring for the Defence Societies to be active in obtaining some protection in this quarter.

Another question which is "in the air" is that of hospital abuse. That powerful body, the Charity Organization Society, appears to be intent on carrying through its scheme for a Central Hospital Board for London. This would certainly be a first real step in the direction; for this Board would contain representatives from all the hospitals and medical colleges; it would, while leaving each hospital its individual autonomy, to some extent supervise and report on how it was conducted; it would check and direct the distribution of charity; and, in brief, would regulate and federate hospital administration in London. One of the tasks it would set itself would be the reform of the out-patient department.

The action brought by a nurse against Dr. Cullingworth for wrongful removal of an ovary was, as I have already written, lost by her. The case has just come on before a court of appeal, and the verdict in favor of Dr. Cullingworth has been confirmed.

There has been a good deal of fluttering lately in the dove-cotes of the nurses. About a year ago the editor of *The Practitioner* started the exposure, not of the properly trained nurse, as he has been wrongfully accused of doing, but of the wrongly trained

or wrongly behaved nurse. His views were confirmed by many of the leading medical papers on your side, and it is quite evident that both the profession and the public in America are feeling the incubus of the "Nurse à la Mode" as much as we have. The above is the title given by a lady (not a nurse) to an article in the *Nineteenth Century*. Being in a lay magazine it will further arouse attention to certain members of the nursing sisterhood who would have brought their colleagues into considerable disfavor if this exposure had not taken place in good time.

A body of registered nurses are now in arms against the proposal to admit to their association asylum attendants, who may be excellent watchers of the insane, but have never had a hospital training in the usual sense of the term. The question is not settled yet. A large number of the nurses appear to object to the asylum attendants being enrolled in their ranks, although their own executive seems to favor the idea.

For many years past the medical papers have carried on a crusade against the antique, ridiculous, and disgusting manner in which the oath is administered in our courts of justice. In case it should be unknown in the States I may briefly state what takes place: The witness has an old, filthy New Testament thrust into his hand; an official of the court gabbles over the form of an oath into his ear; and then tells him hurriedly to "kiss the book." This he does in a thoughtless manner, at the same time placing his lips either to the frowsy cover or on one of the soiled pages. Now, it has been discovered that a witness may, if he prefers it, be sworn in the Scottish manner, *i.e.*, with uplifted hand and repeating after the judge the form of oath. Needless to say that this form is free from all sanitary objections which may be urged against "kissing the book," while it is infinitely more dignified and solemn. The medical profession have been the pioneers in introducing, or rather I should say of reviving, the swearing with uplifted hand; and the presiding judges have not infrequently taken advantage of their position to throw cheap ridicule on what they termed the latest sanitary fad of the doctors. Now, at last, the luminaries of the law are themselves realizing the advantages of the Scottish form of oath, and it is proposed that the more usual, but objectionable, method should be abolished.

Are tropical climates particularly inimical to Europeans? The subject is considered in a well-reasoned, and, as the French would say, "*très documenté*" article in the *British Medical Journal* by Dr. Luigi Sambon of Rome. I dare say some of your readers will remember his courtesy and kindness to visitors to the "Eternal City" during the last International Congress. The subject is of particular interest to a colonizing nation, such as we are, and Dr. Sambon's conclusions are very suggestive. They are, in brief, that if Europeans would but study their new surroundings, and try to adapt their customs accordingly, there is no reason why they and their children should not thrive as well as, if not better than, the natives. Heat, as such, he holds to be rarely the cause of death or disease, for the human body can endure high temperature with impunity. Even "heat stroke," according to his views, is probably not the result of high temperature, but of some germ which becomes active under certain circumstances, of which the high temperature is one. Considering how the average Britisher scorns to alter his insular habits in any way whatever it is really remarkable how he not only survives, but even thrives, in the climates and in the circumstances where he has made himself quite at home. For instance, "India Pale Ale" is an alcoholic beverage which drinkers of light German beer would consider extremely heavy, and yet, as its name indicates, it is the concoction especially brewed for consumption in a tropical climate. To-day I saw a returned colonist from Buluwayo, and he informed me—as if it had been his chief grievance—that whiskey there cost $20 a bottle. He would doubtless have looked upon me as a scientific crank if I had suggested that whiskey was not at any price the drink for South Africa. The subject raised by Dr. Sambon is an interesting one, and might, if public and governmental attention was directed to it, be a most valuable one. The study of it might prove a very feasible one in the States with their great variety of climate.

The Roentgen rays have temporarily given place in professional interest to the bubonic plague. The history of previous outbreaks in England, including that of the "Great Plague," has been studied under the fresh light of modern knowledge, and many of our journals have published articles by those of our community who have formerly practiced in the East.

In the summary of last year's medical work the most serious blot is, according to my way of thinking, the number of deaths from anes-

thesia; no less than sixty-three occurred in the United Kingdom in 1896, being an increase of three deaths over the number in the previous year. In the large majority of the fatal cases the symptoms appeared a few minutes after commencing inhalation (27); in twenty-four cases just at the beginning or during the operation; in seven cases directly after the completion of the operation; and in five cases no particulars are given. One death was in Ireland, two in Scotland, and sixty in England. So that the death-rate in Ireland is one to four and a half millions of inhabitants, in Scotland double that rate, and in England almost ten times the rate. Fifty-five of the deaths were due to chloroform, or mixtures containing it, six to ether, and one to nitrous oxide. How many were due to carelessness?

From a series of observations in a throat and ear clinic we have further confirmation of the value of eucaine as a local anesthetic. The solutions keep well, without the addition of any antiseptic. They can be sterilized without undergoing any decomposition; and a two-per-cent solution appears to be sufficient for average use. The drug is not altogether free from unpleasant effects, but it is decidedly less toxic than cocaine. It cannot, however, entirely replace the latter drug, as it does not shrink the tissues and hence is not such a help to examination of the nasal cavities.

The perennial subject of the uric-acid diathesis is again with us. Dr. Haig's views that it is due to errors of diet—chiefly to meat-eating—have been met by a medical man back from India who is prepared to point to parts of the East where the natives never touch meat, and where uric-acid calculi are very much more frequent than they are in this meat-devouring country! The riddle is still unsolved.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

It is almost impossible at the present moment to open a French medical paper without seeing some article or letter bewailing the overcrowded condition of the medical profession and the evil results springing from it. Yet there are in France at the present moment fewer medical men than under Louis Philippe.

In the opinion of some the cause of the distress should be sought for rather in the difficulties artificially caused by legislation. As the law now stands no physician may dispense any drugs, even to his own patients, if in the same commune a chemist is established. The result has been that localities so small that no physician is to be found there, possess a pharmacy. No pharmacist would ever be found in similar localities in Great Britain or the United States, as in those countries the neighboring physicians would do their own dispensing, and the pharmacist would not obtain custom enough from other sources to enable him to live. In France, however, the pharmacist well knows that from the instant he establishes himself in a locality, all prescriptions must be made up by him. The result is that a certain locality must furnish custom enough for the physician, and also for a pharmacist, and both may be obliged to live in semi misery, where one could have obtained a fair income.

Nor is this all; it is impossible for the physician to violate the law and dispense; the proof against him would be visible, palpable. The pharmacist, however, can easily give medical advice, and proof of his doing so is difficult to obtain; and even were a verdict obtainable the physician would hardly care to engage in legal proceedings with the man who would continue to make up his prescriptions.

Some time ago I examined from a statistical point of view some of the departments, and I found that where physicians had increased in number pharmacists had increased in greater proportion, and that even in regions where the number of physicians had diminished, as in some of the wilder parts of France, the number of pharmacists had kept on increasing.

For the last two years a bill has been under consideration by the French Government, in which a certain clause allows physicians to dispense remedies when either they or their patients are more than four kilometers (two and one-half miles) from the nearest pharmacist. The committee named by the French Chamber of Deputies has raised this distance to six kilometers (three miles and three-quarters). Thus, in case this last decision is adopted, a peasant may be compelled to send three and three-quarter miles for a physician, who, when he has made his visit, may administer only a prescription, which must be carried over the three and three-quarter miles to the pharmacist in order to be made up.

Such legislation would seem to be the real cause of medical distress rather than any

overcrowding, which is nothing in France as compared to Great Britain or the United States.

The city government of Paris spends from 140,000 to 145,000 francs ($28,000 to $29,000) yearly for night medical assistance. In every police station is kept a list of certain physicians in the ward who engage to remain at home certain nights in the week, and who are called by the police in cases of sudden emergency. For every visit thus made, a fee of 10 francs ($2) is paid by the city, and 20 francs ($4) in childbirth cases, provided the case is ended by the physician called in, otherwise the fee is the customary one of 10 francs ($2).

It has recently been decided by the Municipal Council of the city to do away with this system, and to have all such night visits made by physicians attached to the Bureaux de Bienfaisance, or Poor Department of Paris, to each of whom a yearly salary of 600 francs ($120) will be paid. Though this sum has been raised to 800 francs ($160) it has produced much dissatisfaction.

Many of the physicians of the Bureaux de Bienfaisance have refused to work on such terms. The first to strike were those of the eleventh ward, who claim that such a salary gives them somewhat less than three francs (60 cents) a visit.

According to Dr. Quinn, surgeons are divided into two classes as regards the surgery of the lungs. The first do not hesitate to open widely the pleural cavity, and do not fear to allow the atmosphere to penetrate into it; the second class, who fear this complication, endeavor to explore the lung without penetrating through the pleura.

Dr. Quinn has experimented on sixty dogs in order to ascertain whether pneumothorax might be prevented by causing the formation of adhesions of the pleuræ previous to incision. Proceeding aseptically he has successively employed iguipuncture, acupuncture, electrolysis, the introduction of foreign bodies, suture of the two portions of the pleura; and in no case was it possible to obtain any such adhesions so long as no suppuration occurred.

As it would be unreasonable to deliberately choose infection as a method of obtaining adhesions, Dr. Quinn thinks that it is useless to endeavor to cause these latter to exist. Such being the case, he thinks it is better to adopt the method indicated by Dr. Tuffier for the avoidance of pneumothorax, namely, to raise the pressure of the air contained within the lung by having the patient breathe compressed air, or by performing tracheotomy and placing the trachea of the patient in connection with a glass flask filled with compressed air.

Dr. Quinn has seen complete adhesion of the lung to the outer pleural lining, and even hernia of the lung, caused by so slight a difference between the external atmosphere and the air contained in the lung as five or six centimeters of pressure.

On the 26th of December the remains of Pasteur, which had been temporarily left in Notre Dame, were transferred to the chapel built in the Pasteur Institute. Speeches were delivered at the tomb by the Minister of Public Instruction and by the representatives of various French and foreign learned bodies. On the following day (Sunday), which was the anniversary of Pasteur's birthday, the general public was admitted to visit the chapel. The attendance was very large.

It may be interesting to note that unlike many Frenchmen of scientific prominence, Pasteur was a zealous member of the Catholic Church from the beginning to the end of his life.

On Sunday, December 20, was celebrated at the Sorbonne the jubilee or fiftieth anniversary of the Doctorate of Dr. Théophile Roussel. The meeting was held under the presidency of the Minister of the Interior, with the assistance of representatives of the Academy of Moral and Political Sciences, of the Academy of Medicine, the Students' Association of Paris, and the Assistance Publique of Paris.

Dr. Roussel was presented with three gold medals offered by the Assistance Publique, the Municipal Council of Paris, and the Council or what might be called the State Legislature of the Department of the Seine.

Dr. Roussel, who was born in 1816, in the Department of the Lazère, one of the wildest parts of France, was Interne of the Hospitals of Paris. His thesis was a remarkable study of Pellagra, which he had personally studied by making a journey to Italy and to those parts of France where the disease existed. Later on he made a journey to Spain in order to study the effects of mercurial poisoning on the miners employed at Almaden. In 1846 Dr. Roussel was the first to describe the necrosis of the maxillæ due to the phosphorus used in making matches.

From a political point of view Dr. Roussel was prominent on account of two laws of which he was the author. The first was a law against drunkenness, passed in 1872; this

law unhappily did not have as much success as was expected of it.

In 1874, however, Dr. Roussel introduced a law which bears his name and which establishes an inspection of all children placed out to nurse. Such a law was undoubtedly needed in a country such as France, where the custom was so general in all large cities of sending the children of the lower classes away into the country to be brought up by hand; the children of the upper classes were nursed at home, it is true, but by hired wet-nurses, who, in turn, had to give their own children to be brought up by hand elsewhere.

A month or two ago Dr. Edward Toulouse, chef de clinique of Mental Diseases, and physician of the Sainte Anne Insane Asylum, published a work entitled "Enquête Médico-psychologique sur les Rapports de la Supériorité Intellectuelle avec la Néuropathie; tome I, Emile Zola" ("A Medico-psychological Examination of the Relations Existing between Mental Superiority and a Neuropathic Condition; Volume I, Emile Zola"). In this work Dr. Toulouse gave the results of experiments which he had performed or caused to be performed on Zola, such as his sensitiveness to pressure, his power of vision, etc. In addition, the pathological history of Zola's family and of the subject himself was described. We learn, for instance, that Zola's mother was subject to certain nervous attacks, and that in his youth Zola himself was affected by a spasm of the orbicularis muscle of the right eye. We learn, too, that Zola is the subject of polyuria; that though he is fifty-six years old his arteries show no symptoms of atheroma; that though formerly a great eater, he is the opposite at present, owing to a tendency to stoutness. His visual field is normal, his tactile power above the normal, but his olfactive power below it. A number of mental tests were likewise employed.

Dr. Toulouse comes to the conclusion that Zola is neither epileptic, hysterical or insane, notwithstanding the existence of various nervous affections, contraction of the orbicularis muscle, cardiac attacks, pseudo-angina pectoris, sensory disturbances, impulsive and oppressive ideas. Zola might strictly be classed among superior degenerates.

Among others who have been examined by Dr. Toulouse are such well known men as Alphonse Daudet, Puvis de Chavannes, Saint Saëns, Berthelot, Jules Lemaître, and the late Edmond de Goncourt.

As Dr. Toulouse's book is intended to be an attack on the theory of Lombroso that genius is a species of epileptoid psychosis, this latter author has written a reply which is published in the *Semaine Médicale* of Paris, January 6, 1897, in which he claims that the very facts given by Toulouse in his work are an argument in favor of Lombroso's theories.

In the first place Lombroso has insisted on the advantages of crossing of races and of change of climate. Now Zola's father was an Italian, his mother French; the paternal grandfather was a Dalmatian, and the paternal grandmother Greek.

Lombroso has called attention to the advanced age of the fathers of many illustrious men, such as Napoleon I, Frederic II, Balzac, Burns and many others. Zola's father was married at forty-three years and died eight years later.

Zola's mother, too, according to what Dr. Toulouse himself writes, suffered from nervous attacks of a hystero-epileptic nature, beginning with the globus hystericus, going on to tonic convulsions with contracture, followed by more extended convulsions with subsequent partial amnesia, or even at times sensorial attacks, which were perhaps hallucinatory in nature.

Lombroso ends by affirming that any one bearing in mind the morbid ideas of Zola, his nocturnal fears, his gastric disturbances and mental anguish under certain circumstances, his attacks of vertigo after intellectual work, the contracture of the orbicularis muscle, the polioencephalitis from which he suffered in youth, and his heredity, could doubt no longer that all of Zola's work corresponds to a hystero-epileptic psychosis.

Dr. Henry Duchesne, of Sainte Anne d'Auray, has recently treated thirty-one cases of enteric fever in the following manner, with but two deaths, one being that of a confirmed drunkard:

1. The patient to drink as much as he may desire to of slightly acidulated drinks, water barely reddened with wine, etc.

2. A daily lukewarm enema, to which twenty centigrammes of a 2½-per-cent. solution of carbolic acid is added.

3. Sixty centigrammes of quinine sulphate administered daily in two doses.

For diet, milk only; no beef-tea, or soup of any kind; no astringents, Spanish or Quinquina wines, or bitter macerations; and, above all, no bismuth.

This Dr. Duchesne considers to be the best treatment for the country, where it is impossible to apply cold baths, from the lack of the necessary apparatus and assistants.